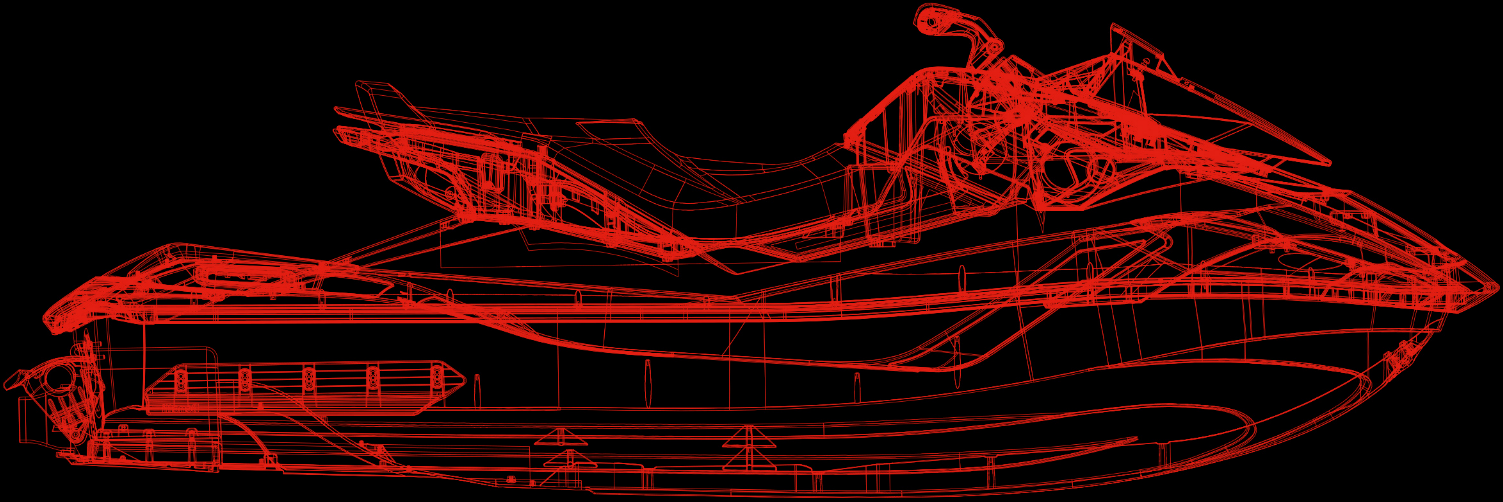
Benelli



B3R

USER MANUAL

Sport, Dynamic, Cruise, Pure

Imprint

Product: B3R

Language: ENU

Publication Status: 03.08.2012

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Content

1 Dear Customer,

We would like to thank you very much for your trust, and congratulate you on the purchase of your new Benelli Runabout PWC! When we developed it, we made a point in creating a versatile and fast PWC. We didn’t forget to include a revolutionary design and a low emission engine technology either.

All you need to observe and know about your PWC has been summarized in this User Manual.

Observing the service work is also a condition for safeguarding your guarantee claims.

Please make sure that any service performed on your PWC should be exclusively done by specialists trained by Benelli. This User Manual is also available in other languages.

Should you require any further information, please consult our homepage at: **http://www.benelli-group.com**.

It is also important to observe the recommended service intervals after the seller's warranty.

This will not only pay off during operation, but also whenever you want to re-sell your PWC

We wish you lots of fun with your Benelli PWC.

Yours truly, Benelli Team

2 About the Documentation

2.1 General introduction to the Personal Water Craft (PWC) User Manual

This User Manual has been compiled for your own safety and comfort, allowing you to get to know your PWC and to get the most enjoyment from your craft.

The manual contains detailed information on the PWC itself, the system, and on the supplied and built-in accessories, as well as instructions for the operating procedures.

▸ Please read it carefully and get familiarized with your PWC before using the craft.

Please note that this manual is not a course on PWC safety or seamanship.

▸ If this is your first PWC, or if you have changed to a PWC model that you are not yet familiar with, please make sure you learn how to handle and operate your new craft properly before putting it into operation.

Info

Your dealer or the national sailing association, or yacht club – will be pleased to provide you with information about local riding schools or experienced trainers.

The sea and wind conditions corresponding to the design categories A, B, and C range from category A - Storm - to the most serious conditions in category C - including the risk of breaking waves or wind squalls. Even if your PWC might resist it, these are hazardous conditions for only competent, capable and well trained riders in well-maintained PWCs.

▸ Make sure that the expected wind and sea conditions comply with the design category of your PWC, and that you are capable of handling the craft under these conditions.

The Benelli PWC is designed according to ISO 10240:2004 for the category D.

This manual serves neither as a detailed instruction into maintenance nor troubleshooting.

- Should any difficulties arise, please contact an authorized Benelli dealer.
- A Maintenance- handbook is provided, follow it in order to maintain your PWC.
- Always maintain your PWC in a proper condition and monitor any wear and tear that occurs over time as a result the usage of the PWC.

Any PWC, regardless of how strongly it is built, can experience serious damage due to incorrect handling which is not compliant with safe skippering.

- Always adjust the speed and direction of the PWC to the current sea conditions.
- Riders should be familiar with the maneuvering procedures during emergencies (man-overboard rescues, etc.) and the employment of the safety equipment.

Info

Sailing schools and clubs organize regular training courses to this end.

- Keep in mind that safety and other equipment may be compulsory in some countries.

Info

Likewise, some countries may request a riding license or authorization according to their national regulations.

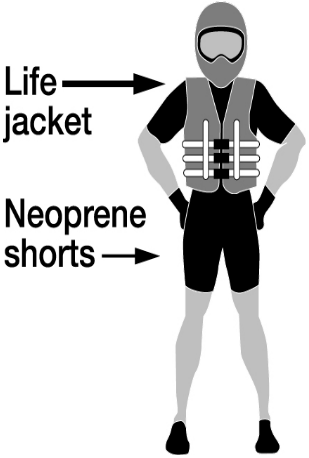
- Find out these details from your local dealer and keep in mind that they will just add to your safety and comfort.

- Please keep this manual or CD in a safe place and pass it on to the new owner when you sell the PWC.

3 Safety

3.1 Preparation before a ride

3.1.1 Clothing



The rider must wear a life jacket which has been approved by the Coast Guard for use on the PWC.

During the ride, shatter-proof protective goggles should be used. Wind, water splashes, and speed can cause the eyes to water and reduce the rider's vision.

PWC riders must wear protective clothing. This comprises: Neoprene shorts or thick, close-woven and tight-fitting clothing which offers sufficient protection. Thin cycling shorts, for example, are not suitable. If you fall into the water, or come near the jet pump nozzle, you can incur severe injuries. Normal swim wear does not provide adequate protection.

Shoes and gloves are also recommended. It is advisable to protect the feet with light and flexible shoes. This reduces the risk of injuries from hitting sharp objects under the water.

We also recommend that recreational riders use a helmet. In case you plan to take part in races, you should definitely wear a helmet approved for the PWC due to the increased risk of accidents from the proximity to other riders and the high speed.

Info

For appropriate and smart outfits, please see our Water and Casual Lines catalogue by Benelli.

Info

Read the instructions and safety directions supplied with the helmet.

Info

Observe the safety regulations and conditions of the respective country.

3.1.2 Important information regarding watercraft helmets

The helmet protects the head in case of collisions, but can also contribute to neck injuries.Therefore, consider the advantages and risks of using a helmet.

You alone must decide on the basis of the prevailing conditions: Helmet – yes or no.

Info

Observe the official regulations for wearing helmets.

3.2 Safety instructions

3.2.1 Riding the PWC by children.

The PWC is not a toy.

It is a highly efficient watercraft meant for the transport of one person. Minors can put themselves and others in danger with it.

Info

Benelli recommends a minimum age of 16 years.

Info

A course for a boat driving licence is recommended and may be mandatory in the area of use.

3.2.2 Floatation

The PWC is not designed for long-term storage in water.

Info

A strong movement of the waves can cause water to enter the water draining system of the engine’s interior. Water in the engine compartment can consequently cause the craft to sink.

PWC riders can fall into the water at any time, so being a good swimmer is absolutely necessary.

- Don’t move further away from the shore with your PWC than you can swim back to by your own force.
- Always use a life jacket. Otherwise you are in acute danger of drowning.

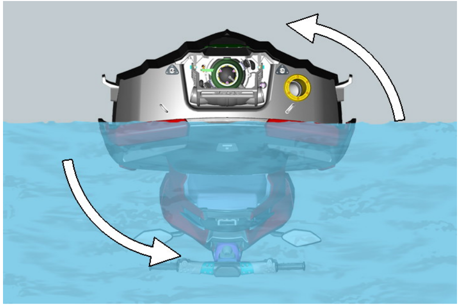
3.2.3 Capsizing

CAUTION

Material Damage Turning the PWC clockwise can let water penetrate into the exhaust system and damage the engine.

- ALWAYS turn the PWC anticlockwise.

If your PWC capsizes, proceed as follows:



- Make sure that the motor is off. Otherwise, pull the safety lanyard immediately or actuate the engine stop button to switch it off.
- Swim to the stern of your PWC.
- Grip the two rear corners of the PWC with your hands and turn it clockwise.
- Plug the safety lanyard in again and start the engine.

3.2.4 Breaking-in of the B3R according to your possibilities

- Do not exceed 2500 rpm during the first 5 minutes of the break-in period.
- Do not run the engine during the first 5 hours with more than 3/4 of the maximum acceleration and do not overstrain the engine.
- Accelerate only for very short times and then ride again with average rpm.

- Warm up the engine after each start.

The correct use of the Benelli B3R will reward you with a greater reliability and a longer life.

- Do not forget to take your PWC to an authorized Benelli dealer after 10 hours of operation and have it serviced.

Info

In case of non-observance, warranty claims could be lost.

Info

It is absolutely necessary to record the service done on your PWC in the unit history in your authorized dealer's B2B platform in order to retain your warranty.

3.3 Restrictions during operation

The safe use of your PWC depends on the correct riding procedures and a good and safe assessment of the respective situation.

- Use your experience and common sense. This is the best way to avoid accidents.

Before using the PWC, pay attention to the following aspects:

- Never allow anyone to ride your PWC without an introduction to the machine and reading the User Manual.
- An explanation of the warning instructions is absolutely necessary and guarantees a safe operation.
- The PWC is not a toy.

Info

Benelli recommends a minimum age of 16 years for its use.

Info

Adults are compelled to supervise the underage.

- The watercraft has be designed for the exclusive transport of max 3 person.
- Please observe the local regulations for the use of your PWC.

Info

You can get precise information on rules and regulations from your licensed Benelli dealer or from the competent maritime authority.

3.4 Safety rules for riding

- The competent authority will tell you whether you need to register your craft (license plate).
- Observe the navigation regulations applicable in the region.

Info

You can get the respective information from the Coast Guard or the water protection police.

It is advisable to consult the local authorities to protect yourself against avoidable difficulties and penalties.

- Ride defensively with a safe speed and always keep a necessary safety distance from other crafts in the water.
- Avoid riding directly behind other boats.
- Do not splash other PWC riders with water.
- Keep a sharp lookout and be careful before making sharp maneuvers.

Info

You and other boats might get alarmed and collide.

- Before making a sharp turn, make sure that there are no watercrafts behind you.
- Ride with foresight and take early steps for avoiding collisions.
- Don’t drink alcohol for practicing the sport safely.
- The rider should wear suitable eye protection.

Info

If you do not do so, spray water can pose a safety risk.

- Wear suitable shoes for riding the PWC.

Info

Objects in the water could lead to unnecessary injuries.

- Benelli recommends the wearing of suitable neoprene suits to avoid injuries from falling into the water.

WARNING

Risk of Accident Releasing the throttle lever completely will make the PWC lose its controllability. This can lead to hitting objects.

- Always pull the throttle lever as much as to keep enough pressure for steering.

- You need to accelerate for riding curves.
- The PWC was not developed for the night. Use it only during the day.
- Avoid riding in waters with algae, flotsam or other obstacles.

Info
These could block the jet pump and/or lead to an increased risk of injury.

- Stick to the minimum water depth of 60 cm or more.
- Do not attempt to cross jumps with the PWC.

Info
You risk major injuries and the PWC can get damaged most severely.

- Riding the surf is strictly forbidden with the PWC.

Info
It is dangerous and prohibited in most countries.

- If you are riding on waves, throttle before cutting through a wave.

Info
Riding too fast can cause injuries to the vertebrae.

Info
Attention! Wave jumps can cause the hull to break (loss of warranty claim!).

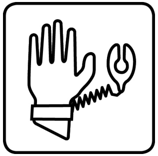
- The rider must always keep a safe riding speed. The latter depends on the visibility, weather conditions, swell, wind, etc.
- While the jet pump is safer than a propeller, safety measures must also be observed.

WARNING

Risk of Accident Major accidents can occur due to careless contact with the jet pump.

- Always keep hands, feet, clothes and long hair away from the intake grate of the jet pump.
- Never insert objects into the jet nozzle while the engine is running.

- Keep clothing, feet, hands, and long hair away from the jet pump intake.



- During a ride with the PWC, the safety lanyard must always be tied to the rider.

Info

During a fall into the water, the safety lanyard will be pulled off, thus, disconnecting the contact to the engine in order to stop the engine and the PWC safely.

4 General information

4.1 Craft Identification Number

You will need the craft identification number to register your craft. It is used for identifying your craft in order to clearly differentiate it from other crafts of the same type.

The manufacturer identification is also required for ordering spare parts.

- In case of theft, report the manufacturer identification, the exact model description and special characteristics of your craft to the appropriate authorities.

Info

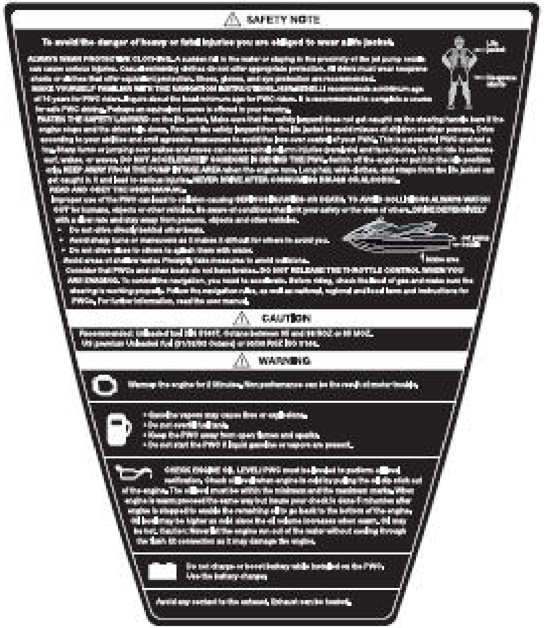
This makes it possible to identify your PWC.

4.1.1 Engine number

A non-standard engine number with 11 digits for identification is in the crankshaft housing.

4.2 Warning stickers

Warning stickers


SAFETY NOTE
CAUTION
WARNING

There are several warning stickers placed on this watercraft.

They point out important safety measures for your own protection.

These stickers must therefore remain in the places provided for them.

Every user must familiarize himself or herself with the meaning of these stickers.

Missing, damaged, or illegible stickers must be replaced immediately and fixed in the correct place.

Info

You can get spare stickers from a licensed Benelli dealer.

4.3 Characteristics of the jet drive

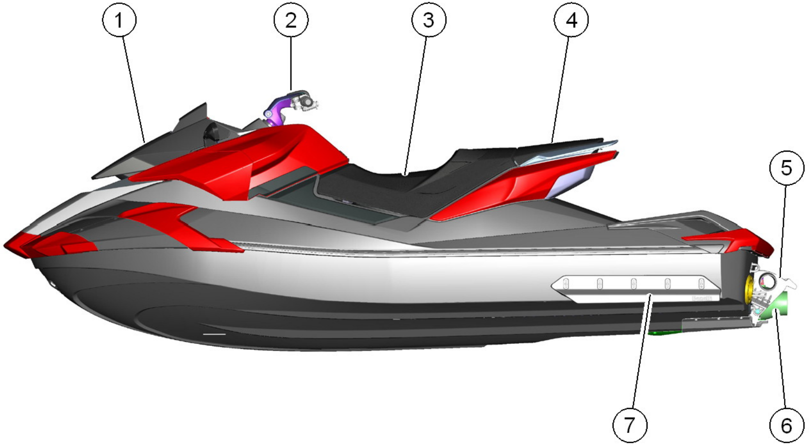
The drive works through the intakes on the bottom sides of the boat via the intake grid.

In this area there is the jet pump located which ejects the water via an impeller through the jet pump nozzle.

5 Features and functions

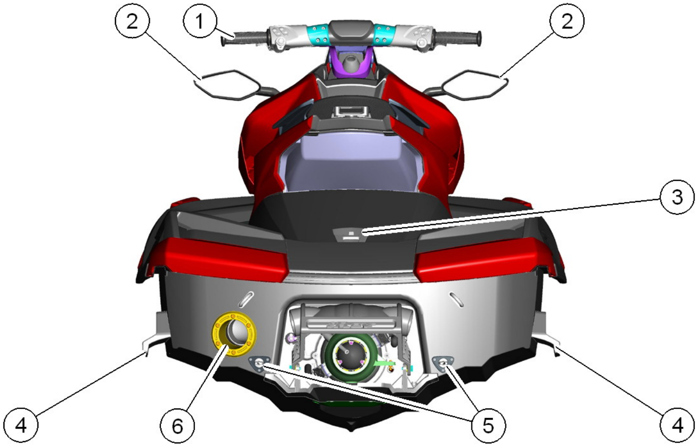
5.1 Arrangements of controls

5.1.1 B3R side view



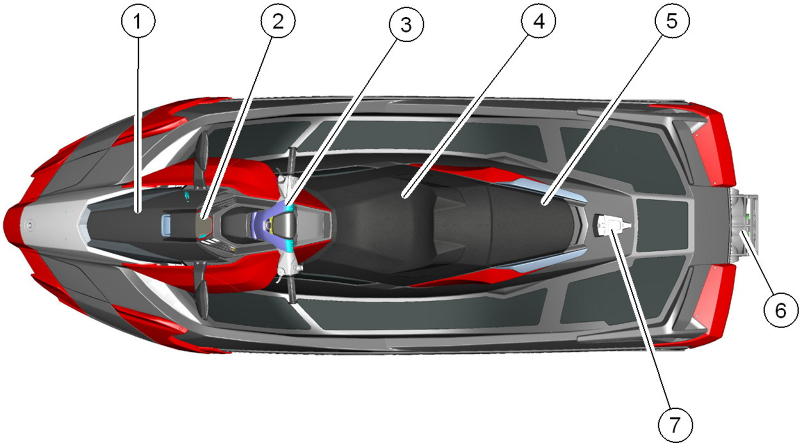
1	Cockpit hood	5	Water brake
2	Handlebar	6	Steering nozzle
3	Seat front	7	Sponson
4	Seat rear		

5.1.2 B3R rear view



1	Handlebar	4	Sponsons
2	Mirrors	5	Water drain plugs
3	Hook for water ski towing	6	Exhaust outlet

5.1.3 B3R top view

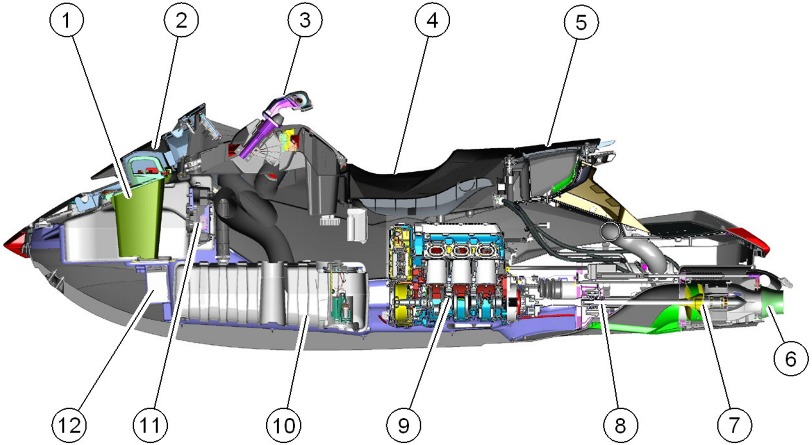


1	Cockpit hood
2	Dashboard
3	Handlebar
4	Seat front
5	Seat rear
6	Water brake
7	Hook for water ski towing

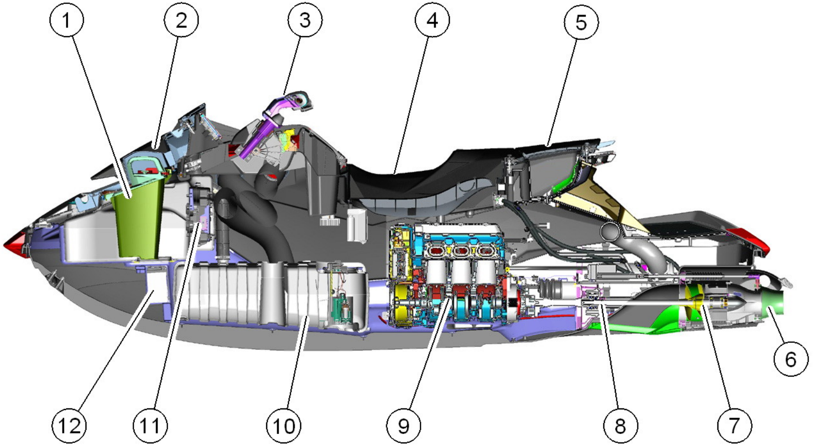
5.1.4 B3R inside view NACL-engine

Option: B3R Pure

OR B3R Cruise



1	Storage box	5	Comfort seat
2	Cockpit hood	6	Steering nozzle
3	Steering - handlebar	7	Impeller
4	Seat front	8	Jet pump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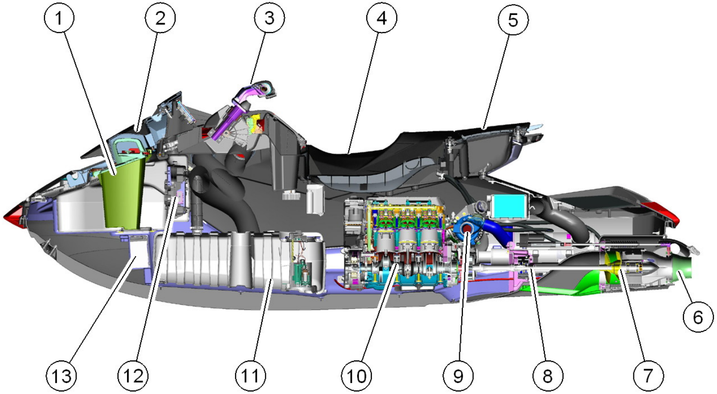
9	Engine NACL	11	Fuse box
10	Fuel tank	12	Battery

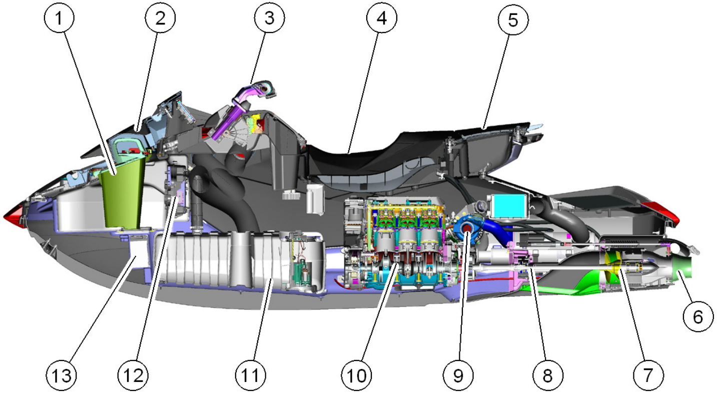
5.1.5 B3R inside view TCCL- engine

Option: B3R Dynamic

OR B3R Sport



1	Storage box
2	Cockpit hood
3	Steering - handlebar
4	Seat front
5	Comfort seat
6	Steering nozzle
7	Impeller
8	Jet pump
9	Turbocharger
10	Engine TCCL
11	Fuel tank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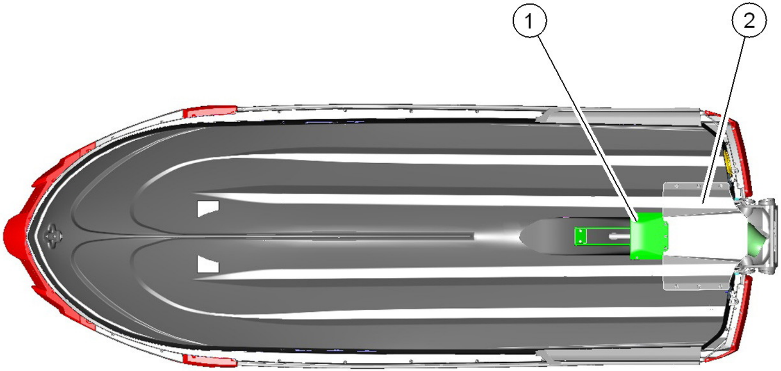
12	Fuse box	13	Battery

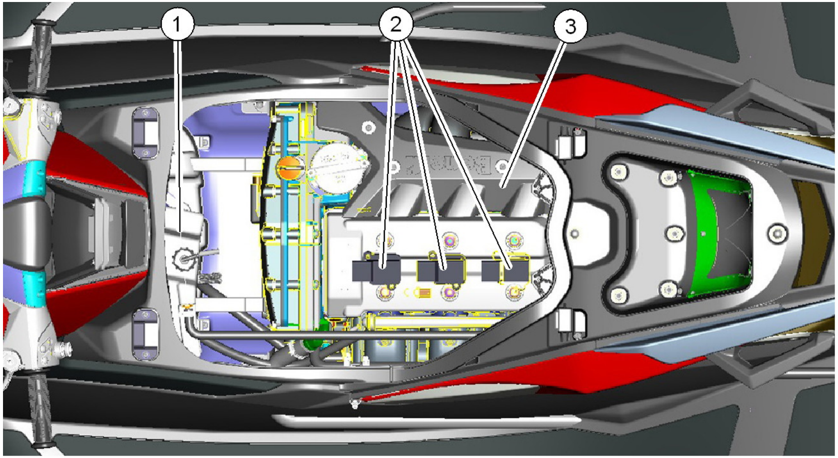
5.1.6 Boat downside



1	Water jet inlet / intake grate	2	Riding plate (exchangeable)

5.2 Engine compartment

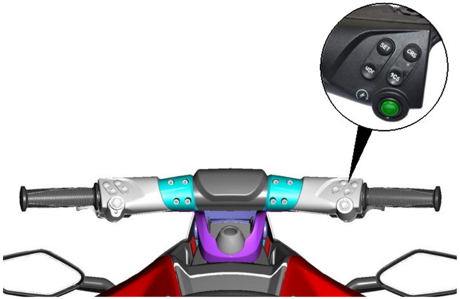
5.2.1 Engine compartement



1	Cooling water-expansion tank	3	Engine cover
2	Ignition coils		

5.3 Engine start-button

The engine start-button is green and housed in the switch unit on the right-hand side of the steering handlebar.



Info

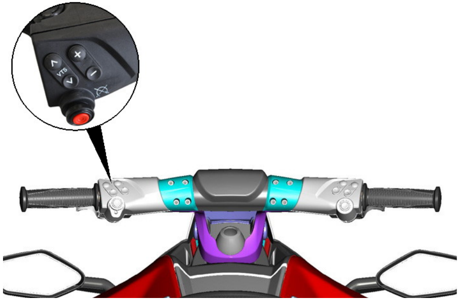
Beware that the engine can only be started if the safety lanyard is plugged in.

5.4 Engine stop-button

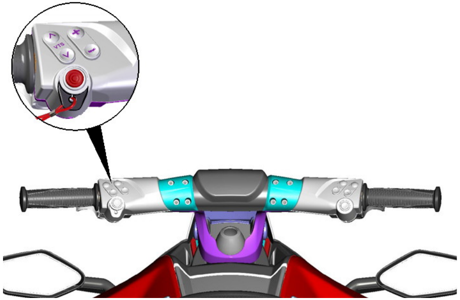
The engine stop- button is red and housed in the switch unit on the left-hand side of the steering handlebar.

Pressing the red engine stop- button will stop the engine.

Pulling the safety lanyard, the engine will also stop immediately.

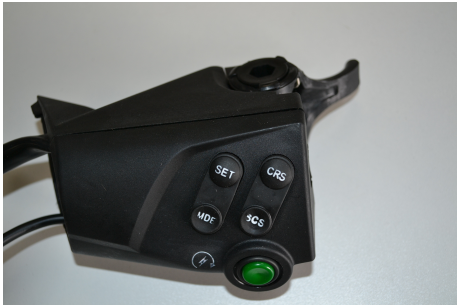


5.5 Safety lanyard



- The engine switches off automatically if the safety lanyard is pulled.

5.6 Throttle



The throttle lever is installed on the right-hand side of the steering handlebar.

- Before starting the engine make sure that the throttle lever returns smoothly to its original position and that the throttle cable is not damaged.

WARNING

Risk of Accident Releasing the throttle lever completely will make the PWC lose its controllability. This can lead to hitting objects.

- Always pull the throttle lever as much as to keep enough pressure for steering.

WARNING

Risk of Accident The PWC's physical limits can cause accidents during high speeds.

- Always observe the turning radius.

- For accelerating pull the throttle lever towards the handlebar.

Info

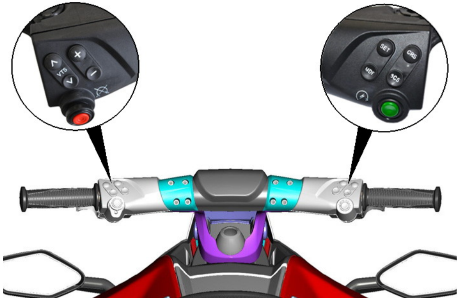
The lever will return automatically to the idle position when it is released.

5.7 Steering

WARNING

Risk of Accident Steering is only possible during positive throttle operation. Releasing the throttle completely poses a risk of accident.

- Be sure that the throttle is not in the released position.



Steering system

Change of direction is achieved with the PWC by turning the steering in the direction in which you want to go.

Moving the steering will change the angle of the steering nozzle.

The ejected water jet out of the steering nozzle causes the boat to move in the desired direction.

Info

Steering is only possible during positive throttle lever operation.

5.8 Adjusting handlebar

Option: B3R Dynamic

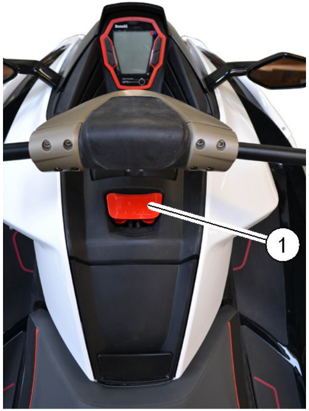
OR B3R Sport

Adjusting Procedure

1. Pull the latch **(1)**.
2. Set the handlebar to a convenient position.
3. Close the latch again.

Info

The handlebar can be adjusted to 5 positions in order to meet the respective body heights of different drivers.



1 Latch to open/close the locking advice

5.9 Removing the seat

Option: B3R Dynamic

OR B3R Cruise

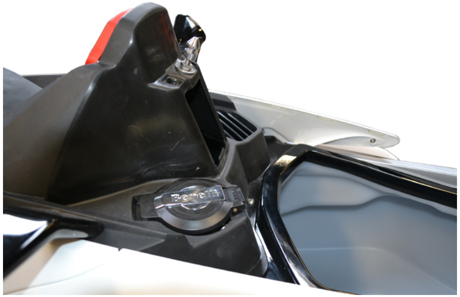
Removal Procedure

1. Remove the rear seat extension.
2. Pull the latch.
3. Lift the rear part of the PWC seat up to an angle of approx. 30°.
4. Pull it out backwards from its fixed position and lift the seat out carefully.

Finishing Tasks

- To bring the seat back into its position, repeat the operation exactly in the opposite way.

5.10 Opening/Closing the fuel cap



To open the fuel tank, pull the tab up.

To close the fuel tank, push the tab down.

Info

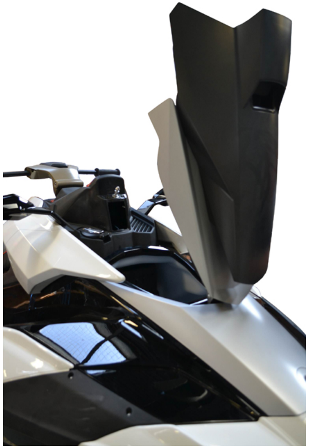
You have to hear a click.

5.11 Mirrors

The B3R series are provided with rear-view mirrors on the right and on the left side, to help during navigation.

5.12 Storage rooms

5.12.1 Front storage room



There is a big storage room below the cockpit hood of your PWC.

5.12.2 Watertight storage box

Option: B3R Dynamic, Additional Equipment

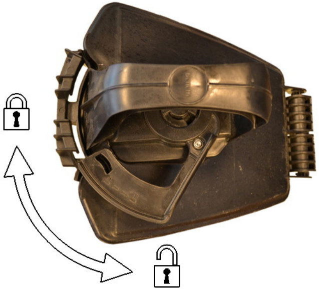
OR B3R Sport, Additional Equipment

The storage room can be equipped with a removable water proof storage box.

The box fits exactly in the storage room in front of the handlebar and can easily lifted out of the storage room.

5.12.3 Opening/Closing the storage box

Operating Procedure



1. To open the box slew round the latch anti-clockwise from the locked position.

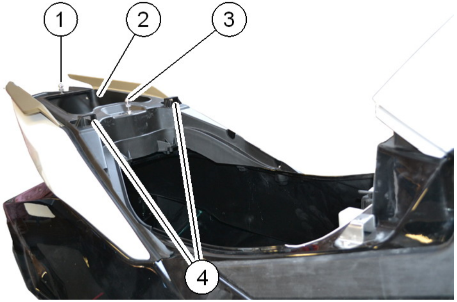
2. Lift the cover.

5.12.4 Comfort seat with storage extension

Option: B3R Dynamic

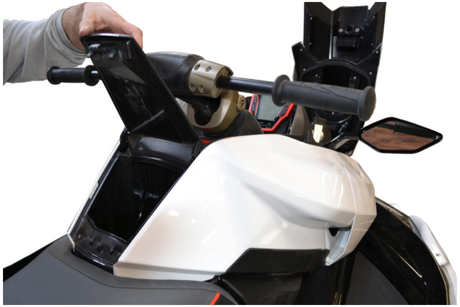
OR B3R Cruise

There is also a storage room below the rear seat **(2)**.



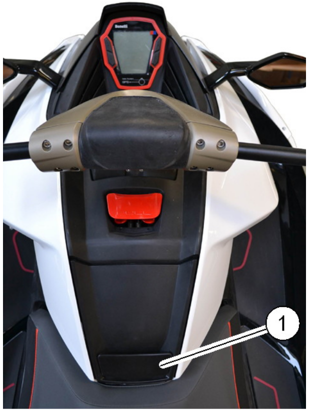
1	Snap lock seat rear
2	Storage room
3	Snap lock seat front
4	Rear seat mounting

5.12.5 Storage room below the handlebar



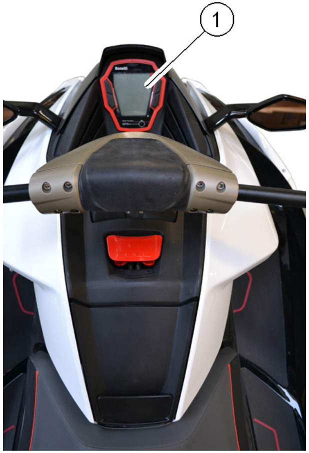
There is an additional storage room for personal belongings below the handlebar.

The storage room can be opened by a latch **(1)**.



1 Latch to open the storage room.

5.13 Dashboard simple instruction



1 Dashboard

The different functions and displays of the dashboard are listed in the appendix C.

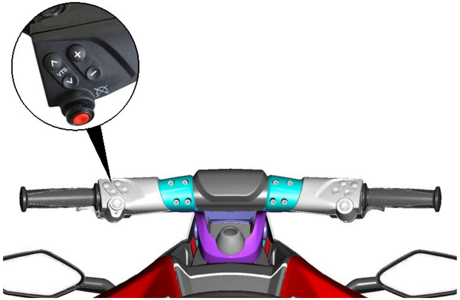
5.14 VETS™ - Variable electric trim system

Option: B3R Dynamic

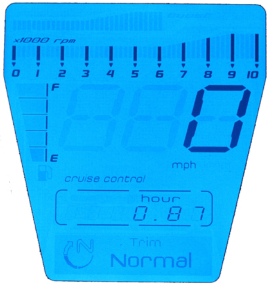
OR B3R Sport

The trim function serves as a device for changing the angle of the jet pump. It pushes the “nose” of the PWC down into the water providing a better stability and agility while operating the vehicle in turns.

The "Variable Electric Trim System" can be operated either with the control switch (VTS) at the left side of the handlebar or with the control button on the dashboard.



The trim position can be preset on the dashboard.



Info

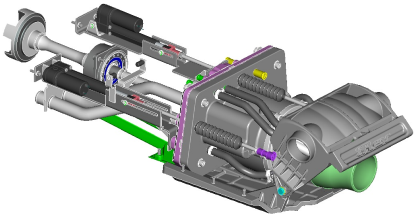
The calibration on the dashboard has priority opposite to the adjustment with the control switches on the handlebar.

After activating the control switches during a ride, the preset position of the jet pump will be reached again after switching off the ignition.

5.15 DBS™ Dynamic brake system

Option: B3R Dynamic

OR B3R Sport



The B3R is equipped with a water brake to slow down the driving speed.

Actuating the water brake lever on the handlebar causes the reverse flap to rotate down, directly in front of the nozzle.

Info

At a speed of more than 10 km/hour the flap is acting as a water brake.

5.16 ERev™ Electrical reverse system

The B3R-series are equipped with a electrical reverse system ERev™ to maneuver the PWC at low speed.

If the reverse flap is closed, the water jet, which comes out of the nozzle, will be turned round and the PWC can be moved backwards.

Info

The reverse only works at a speed less than 10 km/hour.

5.17 Cruise control

Option: B3R Dynamic, B3R Sport

OR B3R Pure, Additional Equipmentl

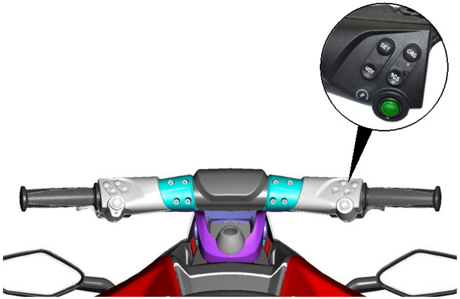
OR B3R Cruise, Additional Equipmentl

The cruise control is a function for limiting the cruise speed.

The control switches are housed in the right-hand steering unit.

Pressing the control switch will activate the cruise control and the required max. speed can be adjusted on the dashboard.

If the speed is limited to a certain value, the PWC cannot accelerated to a higher speed than preset.



Info

To activate or deactivate the cruise control there is no password required.

The function can be deactivated automatically by switching off the ignition.

5.18 Activation of a Personal Water Craft's ECU

Please make sure, that the diagnostic software Maya is installed correctly on your PC.

Installation files, installation guidelines and user manual can be downloaded from the Download Centre of Benelli's B2B web platform.

Info

http://shop.benelli-group.com.

Editing Procedure

1. Connect PC to ECU
2. Read out the ECU Code
3. Register the PWC
4. Activate the ECU
5. Verify the successful activation

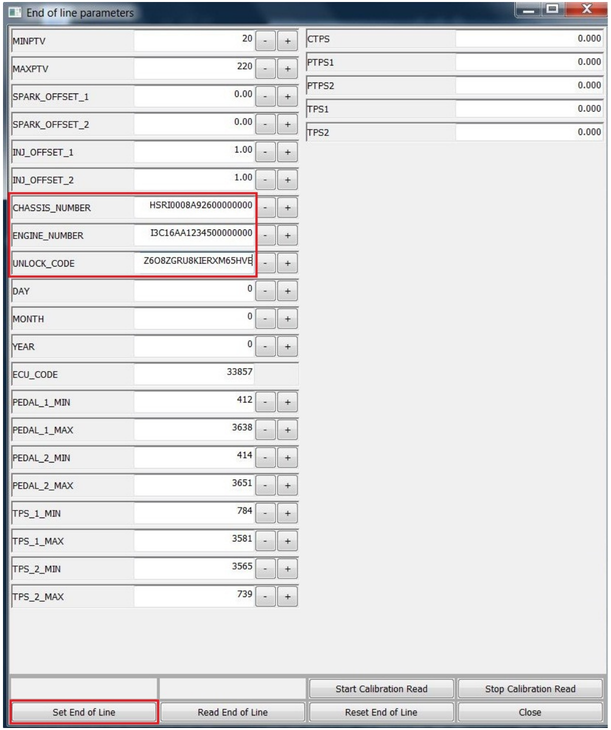
5.18.1 Connecting PC to ECU

Operating Procedure

1. Connect your PC to the PWC’s ECU using the diagnostic cable.
2. Switch on the ignition.
3. Start the application MAYA on the PC you just connected to the PWC’s ECU.

5.18.2 Reading out the ECU Code

Operating Procedure

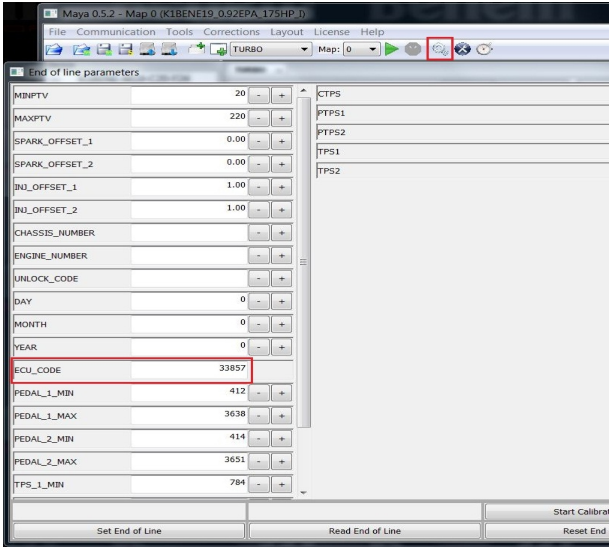

End of line parameters
-
+
Start Calibration Read
Stop Calibration Read
Set End of Line
Read End of Line
Reset End of Line
Close

MINPTV	20
MAXPTV	220
SPARK_OFFSET_1	0.00
SPARK_OFFSET_2	0.00
INJ_OFFSET_1	1.00
INJ_OFFSET_2	1.00
CHASSIS_NUMBER	HSRI0008A92600000000
ENGINE_NUMBER	I3C16AA1234500000000
UNLOCK_CODE	Z6O8ZGRU8KIERXM65HVE
DAY	0
MONTH	0
YEAR	0
ECU_CODE	33857
PEDAL_1_MIN	412
PEDAL_1_MAX	3638
PEDAL_2_MIN	414
PEDAL_2_MAX	3651
TPS_1_MIN	784
TPS_1_MAX	3581
TPS_2_MIN	3565
TPS_2_MAX	739

CTPS	0.000
PTPS1	0.000
PTPS2	0.000
TPS1	0.000
TPS2	0.000

1. Click on the icon “End of Line Parameters” to open the correspondent window.

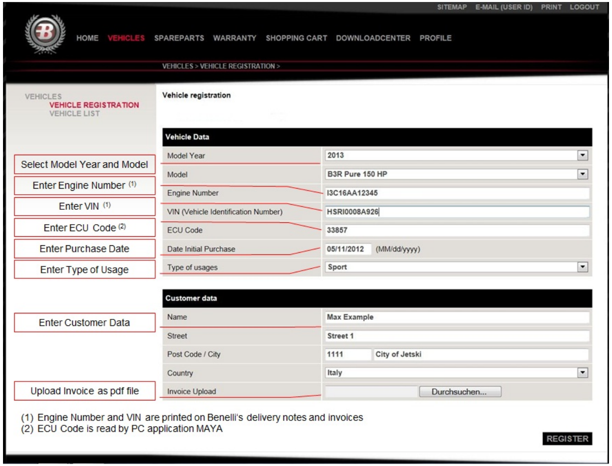
2. Find the ECU Code.


Maya 0.5.2 - Map 0 (K1BENE19_0.92EPA_175HP_I)
File
Communication
Tools
Corrections
Layout
License
Help
TURBO
Map: 0
End of line parameters
CTPS
PTPS1
PTPS2
TPS1
TPS2
Start Calibrat
Set End of Line
Read End of Line
Reset End

MINPTV	20
MAXPTV	220
SPARK_OFFSET_1	0.00
SPARK_OFFSET_2	0.00
INJ_OFFSET_1	1.00
INJ_OFFSET_2	1.00
CHASSIS_NUMBER	
ENGINE_NUMBER	
UNLOCK_CODE	
DAY	0
MONTH	0
YEAR	0
ECU_CODE	33857
PEDAL_1_MIN	412
PEDAL_1_MAX	3638
PEDAL_2_MIN	414
PEDAL_2_MAX	3651
TPS_1_MIN	784

5.18.3 Registering the PWC

Operating Procedure


SITEMAP E-MAIL (USER ID) PRINT LOGOUT
HOME VEHICLES SPAREPARTS WARRANTY SHOPPING CART DOWNLOADCENTER PROFILE
VEHICLES > VEHICLE REGISTRATION >
VEHICLES
VEHICLE REGISTRATION
VEHICLE LIST
Select Model Year and Model
Enter Engine Number (1)
Enter VIN (1)
Enter ECU Code (2)
Enter Purchase Date
Enter Type of Usage
Enter Customer Data
Upload Invoice as pdf file
Durchsuchen...
REGISTER

Vehicle registration

Vehicle Data	
Model Year	2013
Model	B3R Pure 150 HP
Engine Number	I3C16AA12345
VIN (Vehicle Identification Number)	HSRI0008A926
ECU Code	33857
Date Initial Purchase	05/11/2012 (MM/dd/yyyy)
Type of usages	Sport

Customer data	
Name	Max Example
Street	Street 1
Post Code / City	1111 City of Jetski
Country	Italy
Invoice Upload	

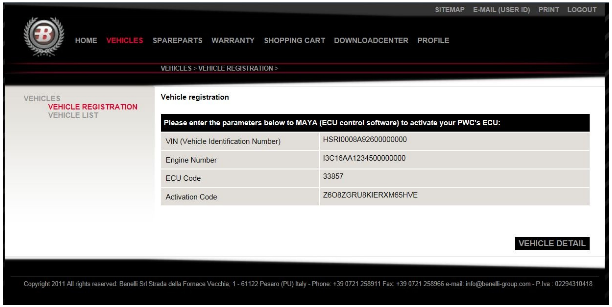
(1) Engine Number and VIN are printed on Benelli's delivery notes and invoices
(2) ECU Code is read by PC application MAYA

1. Log on to Benelli's B2B web platform.

Info
http://shop.benelli-group.com

2. Go to the menu “Vehicle Registration” and enter the requested data.
3. Press “Register”.

4. The web platform displays the data of the registered vehicle that is relevant for the activation.


SITEMAP
E-MAIL (USER ID)
PRINT
LOGOUT
HOME
VEHICLES
SPAREPARTS
WARRANTY
SHOPPING CART
DOWNLOADCENTER
PROFILE
VEHICLES > VEHICLE REGISTRATION >
VEHICLES
VEHICLE REGISTRATION
VEHICLE LIST
VEHICLE DETAIL

Vehicle registration

Please enter the parameters below to MAYA (ECU control software) to activate your PWC's ECU:	
VIN (Vehicle Identification Number)	HSRI0008A92600000000
Engine Number	I3C16AA1234500000000
ECU Code	33857
Activation Code	Z6O8ZGRU8KIERXM65HVE

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5.18.4 Activating the ECU

Operating Procedure

1. Copy and paste the relevant vehicle registration data from Benelli's B2B web platform to your MAYA application.

   Copy instruction (➠ Page 48)

   Example (➠ Page 48)

Info

In case you enter the data to MAYA manually, please take care that the CHASSIS_NUMBER and the ENGINE_NUMBER amount to 20 digits by filling up the field with enough zeros (0) at the right end.

---

2. Press “Set End of Line” to save your data and activate the ECU.

Copy instruction

From B2B field	To MAYA field
VIN (Vehicle Identification Number)	CHASSIS_NUMBER
Engine Number	ENGINE_NUMBER
Activation Code	UNLOCK_CODE

Example

Engine number in B2B	ENGINE_NUMBER in MAYA
BE1102MU20C0C002	BE1102MU20C0C0020000

5.18.5 Verification of successful activation

Operating Procedure

1. Switch off the ignition, wait 5 seconds.
2. Switch on the ignition again.
3. Start the engine.
4. Accelerate the engine.
   ◃ If you achieve an RPM higher than 2500, the activation was successful.

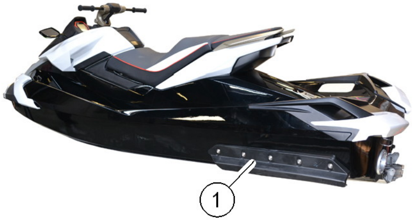
5.19 Sponson (mechanical boat trim)

There is a trim edge fixed on both sides of the boat.

Three positions can be adjusted for a individual ride.

Info

Specially for riding curves the sponsons can be adjusted individually.



1	Sponson

6 Operation

6.1 Daily checks before a ride

DANGER

Mortal Danger Exhaust fumes contain carbon monoxide, a colourless, odorless and highly toxic gas. Inhalation of exhaust gases can cause a carbon monoxide poisoning, asphyxia and death.

- Never run the engine in a closed room.

CAUTION

Material Damage Material damage or system failures can occur if your PWC is not checked regularly.

- Do a check-up of the basic functionality of your PWC before every ride, even with regular inspections.

Info

Conduct the following checks once a day before starting a ride.

Checking Procedure

CAUTION

Material Damage The engine can get damaged.

- Always warm up the engine before a ride.
- Never switch off the engine with throttle lever fully open.

1. Warm up the engine.

DANGER

Danger of Explosion The fuel vapors assembled in the engine compartment constitute a fire and explosion risk.

▸ Make sure that there is no fuel leakage in the engine compartment room.

2. Check the fuel tank level and refill if necessary.

Info

There is no reserve indicator!

3. Remove the front seat.
4. Ventilate the engine compartment for a few minutes so that the fuel vapors can escape.
5. Check the oil level. (➠ Page 53)
6. Check that the drainage rubbers (2 pieces) on the rear of the hull are plugged in and fixed.
7. Check the water inlet for correct attachment and eliminate possible deposits.
8. Do a visual inspection of the battery and check for tightness.
9. Do a visual inspection of the jet-pump and check for tightness.
10. Check the status and function of the safety lanyard.
11. Check the protective clothing.
12. Feel the hull and check for damage.
13. Check all bolts, nuts, and holders that are part of a fixed screw connection or a fixing element for tight fitting - Tighten if necessary.
14. Check all hose connections for tight fitting.
15. Check all hose connections and hose clips for cracks and damage - Replace if necessary.

16. Check the steering for a smooth and steady operation and for excess clearance.

WARNING

Risk of Accident If the throttle does not return to its original position automatically, it may lead to a loss of control of the PWC.

- Check the throttle lever function several times.

---

17. Check the throttle lever for a smooth and steady operation.
    ◁ The throttle lever must return automatically to the original position when it is released.
18. Start the engine and run it for a short time.
19. Pull off the safety lanyard from the engine cut-off button.
    ◁ The engine has to stop right away.

6.2 Warming up the engine

Technical Data

⌖ Idling rpm - in water	1,500 up to 1,750 rpm (25 up to 29.17 Hz)

DANGER

Mortal Danger Exhaust fumes contain carbon monoxide, a colourless, odorless and highly toxic gas. Inhalation of exhaust gases can cause a carbon monoxide poisoning, asphyxia and death.

- Never run the engine in a closed room.

Conditions

- The PWC is inside the water.

Operating Procedure

1. Run the engine in idle mode for at least 5 seconds until the oil is distributed over the entire lubrication circulation.

Technical Data	
Idling rpm - in water	1,500 up to 1,750 rpm (25 up to 29.17 Hz)

2. Afterwards, run the engine for 2 minutes with max. 1/2 gas on operation temperature.

6.3 Checking the oil level

Work Material

◆	Nonfuzzing cloth

Lubricants and Technical Substances

◆	Engine Oil	fully synthetic 4 stroke	
		Viscosity	5W50
		Specification	API SJ-CF or higher

CAUTION

Material Damage An incorrect oil level can lead to a severe engine damage.

- ▸ Check the oil level regularly to ensure that the motor can run properly.
- ▸ Make sure that the PWC is in horizontal position (operating condition).
- ▸ Make sure that the engine is COLD. Just check after a short start of 5 seconds.

CAUTION

Material Damage An overheating could severely damage the engine and the exhaust system.

- ▸ **Never run the engine for more than 10 seconds outside of the water.**
- ▸ Outside of the water run the engine only in idle mode.

WARNING

Material Damage An oil level exceeding the overfill mark could cause a major engine damage.

- ▸ Never allow the oil level to exceed the maximum mark.

Conditions

- The PWC is outside of the water.

Preparatory Tasks

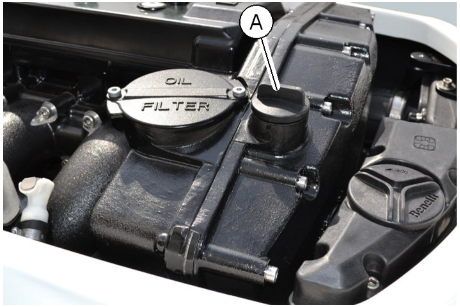
- ▸ Start the engine for a couple of seconds and stop it again.
  - ◃ The engine is at operating temperature.

Info

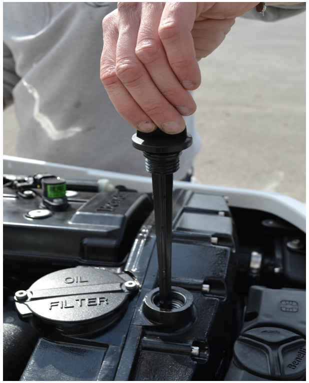
The oil level will rise as the engine warms up.

Checking Procedure

1. Unscrew the oil dipstick **(A)** from the oil module.



A Oil dipstick



2. Wipe the dipstick off with a clean cloth.

Required Material
Nonfuzzing cloth

3. Put the dipstick back inside the oil module.
4. Pull the dipstick out again and check the oil level measurement.

Technical Data
The oil level should be between the MIN and MAX mark on the dipstick.

Result 1 of 2

The oil level is under the MIN mark.

- Refill some oil.

Required Material
Engine Oil fully synthetic 4 stroke Viscosity: 5W50 Specification: API SJ-CF or higher

Info

Use only Benelli recommended oil. Otherwise, we cannot recognize warranty claims.

Result 2 of 2

The oil level exceeds the MAX mark.

- Drain some oil from the oil module.

5. Screw the oil-dipstick back into the oil module.

6.4 Filling up the fuel tank

Lubricants and Technical Substances

Gasoline	unleaded	
	Octane index	91 up to 98 RON
	Octane index	≥85 MON
Super gasoline*	unleaded	
	Octane index	95 up to 98 RON
	Octane index	≥85 MON
US Premium Super*	unleaded	
	Octane index	95 up to 98 RON
US Premium Regular*	unleaded	
	Octane index	91 up to 93

* Alternative

Filling Quantities

Fuel Tank Gasoline	≤70 ℓ (≤18.5 liq. gal_{US})

DANGER

Danger of Explosion Refueling near an open flame can cause an explosion.

- Never refuel near open flames.

CAUTION

Material Damage Refueling in the rain or in a dusty environment may result in a fuel contamination which can reduce or even damage the engine's functionality.

- Avoid refueling under such environmental conditions.

CAUTION

Danger of Pollution Refueling in the water can lead to environmental pollution.

- Never refuel in the water.

Preparatory Tasks

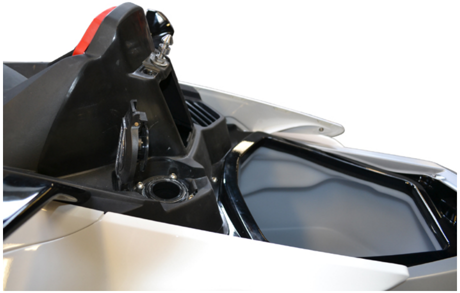
1. Always keep the PWC horizontal when filling the fuel tank.
2. Pull off the safety lanyard.

Info

Make sure the engine is switched off during the refueling procedure.

Filling Procedure

1. Open fuel filling cap.



DANGER

Danger of Explosion The fuel vapors assembled in the engine compartment constitute a fire and explosion risk.

- ▸ Make sure that there is no fuel leakage in the engine compartment room.

CAUTION

Material Damage Low quality fuels or fuels that are not compliant with the industrial standard can lead to deficient engine performance. Continuous "knocking" can cause severe damage to the engine.

- ▸ Use a high quality gasoline type with a higher octane rating.

CAUTION

Environmental Pollution Fuel will expand under the influence of heat and may leak out through the fuel tank ventilation.

- ▸ Never fill the fuel tank up to the top edge. Pay attention to the maximum level marking.

2. Fill in the fuel.

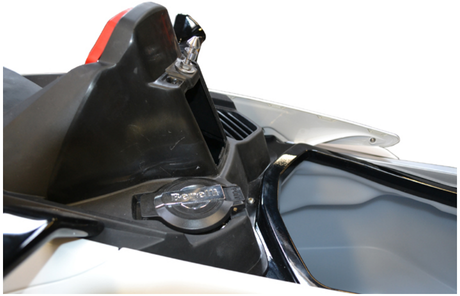
Required Material	
Fuel Tank Gasoline	≤70 ℓ (≤18.5 liq. gal$_{\text{US}}$)
Alternative	
Super gasoline unleaded Octane index: 95 up to 98 RON Octane index: ≥85 MON	
US Premium Super unleaded Octane index: 95 up to 98 RON	
US Premium Regular unleaded Octane index: 91 up to 93	

Info

Do not pour the fuel too fast since the air in the tank will escape and the fuel will not flow back..

Pay attention to the maximum level.

3. Close the fuel filling cap correctly after refelling.



6.5 Checking the fire extinguisher

Info

The necessity of a fire extinguisher depends on the country, where you operate the PWC.

Info

The fire extinguisher can be fixed in the front storage compartment.

Checking Procedure

1. Visually check the extinguisher.
2. Check the expiration date before starting the ride.

6.6 Checking the steering system

Checking Procedure

1. Check the correct fixing of the steering.
2. Move the handlebar slowly from one (steering) stop position to the other.

Info

The jet pump steering nozzle should move at the same ratio as the steering.

6.7 Battery

A sealed-type battery is installed in the Benelli PWC.

After the enclosed electrolyte has been filled into the battery for the first time, the sealing strip must not be removed again.

It is not necessary to check the electrolyte level of the battery or to add distilled water.

The battery is maintenance-free! You must however, maintain the charge of the battery as intended in order to maximize the life of the battery and to guarantee that the battery will supply the current necessary for starting your PWC.

When used regularly, the charging system helps to maintain the full charge of the battery.

However, if your PWC is only used occasionally, the battery might possibly get discharged.

Info

Batteries get discharged on their own because of the way they are built. The reason for the discharge depends on the type of battery and the ambient temperature.

When the temperature rises, the degree of discharge will increase.

6.7.1 Maintenance and care of the battery

CAUTION

Material Damage A misbehavior with the battery can cause a damage of the battery or a malfunction of the electrical system.

- Never remove the airtight battery cover.
- Do not replace the Benelli battery with a conventional one.
- Always follow the instructions on the battery cover when charging service-free batteries.
- Do not use quick chargers for cars. Benelli recommends special chargers. For more details contact your official Benelli dealer.

Every craft owner is responsible for maintaining the battery in fully charged condition.

If this is not done, the battery might fail and your PWC might not start.

If you use your PWC only rarely.

- The battery voltage must be checked every week with a voltmeter. If the voltage drops below 12.6 Volt, the battery must be charged with a suitable charger.

Required Material
Voltmeter
Battery charger Optimate 3

If you don’t use your PWC for more than two weeks.

- The battery must be recharged with a suitable charger.

Required Material
Battery charger Optimate 3

6.7.2 Charging the battery

Work Material

⌖	Battery charger	Optimate 3

Info

If the voltage drops below 12.6 Volt, the battery must be charged.

Preparatory Tasks

- Remove the battery from the PWC, if possible.

Filling Procedure

- Charge the battery with a suitable charger for sealed batteries.

Required Material
Battery charger Optimate 3

Info

Follow the instructions on the battery cover.

6.7.3 Battery sulfation

Sulfation is a frequent cause for battery failure.

It occurs when the battery remains discharged for a long time.

Info
Sulfate is a normal waste product of the chemical reaction in the battery.

6.7.4 Checking the battery clamps

Checking Procedure

1. Check the battery clamps visually, they have to be fixed correctly.
2. Make sure the covers of the clamps are in place.
3. In case of capacity loss, look for the cause immediately.

Info
Never operate your PWC with a faulty battery.

6.8 Checking the throttle lever

Checking Procedure

SET
CRS
MDE
SCS

⚠ **WARNING**

Risk of Accident If the throttle does not return to its original position automatically, it may lead to a loss of control of the PWC.

- Check the throttle lever function several times.

- Check the throttle lever for a smooth and steady operation and for excess clearance.
  - ◃ The throttle lever must return automatically to its original position when released.

  Result

  The throttle lever does not return automatically.

  - Have the throttle checked by an official Benelli dealer.

6.9 Checking the safety lanyard

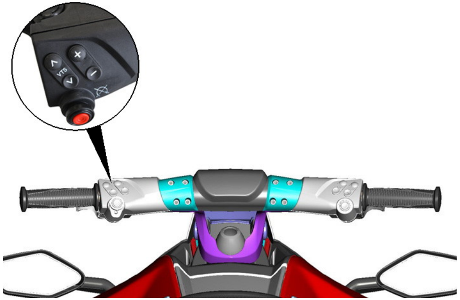
Checking Procedure

- ▸ Check the safety lanyard for damages (cracks, etc.).

  Result

  Lanyard damaged

  - ▸ Replace the lanyard immediately by a new one.



6.10 Turning

To turn the PWC, two simultaneous actions are required:

- Turning the handle bar
- Accelerating

It is only through acceleration that the necessary water jet pressure will build up for changing the direction.

The stronger the pressure at the steering nozzle, the stronger the turn.

WARNING

Risk of Accident The craft cannot be steered when the engine is switched off. This leads to a loss of control and can cause an accident.

- Never switch off the engine while you are still maneuvering or want to make fast turns.

WARNING

Risk of Accident Releasing the throttle lever completely will make the PWC lose its controllability. This can lead to hitting objects.

- Always pull the throttle lever as much as to keep enough pressure for steering.

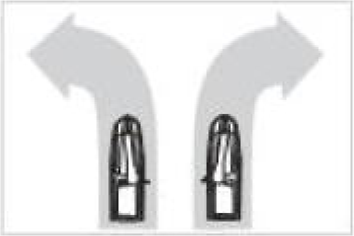
WARNING

Risk of Accident The PWC is very sporty and versatile. You could loose your hold and fall off during sharp maneuvers.

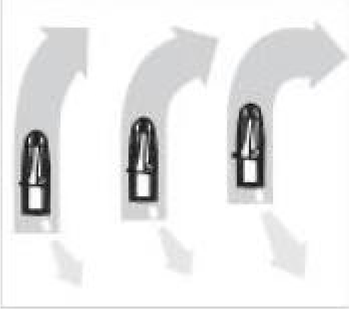
- Always ride according to your personal skills and knowledge.

- Accelerate slightly before you start to turn.
- To do a left-hand turn, move the handle bar to the left.
- To do a right-hand turn, move the handle bar to the right.

To make wide turns, a low steering nozzle pressure is required.



If you let the throttle lever go, there will be hardly any water jet pressure to control the turning operation.



Info

Only reduced controllability is possible.

Info

If the engine is switched off, there is no more water jet pressure and the PWC cannot be moved anymore.

6.11 Starting the engine

DANGER

Mortal Danger Exhaust fumes contain carbon monoxide, a colourless, odorless and highly toxic gas. Inhalation of exhaust gases can cause a carbon monoxide poisoning, asphyxia and death.

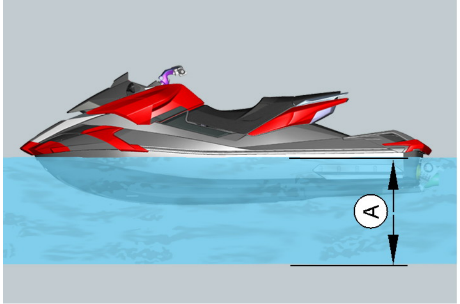
- Never run the engine in a closed room.

CAUTION

Material Damage Overheating could severely damage the engine and the exhaust system.

- Never run the engine for more than 10 seconds on land and on low rpms.

Operating Procedure



A Min water depth for operation 60cm

- Observe a minimum water depth of 60cm.

Info

Exhaust gases are toxic.

6.12 Starting from deep water

Operating Procedure

1. Make sure that the engine is switched off.
2. Swim to the rear of the PWC.
3. Pull yourself up to the PWC.
4. Grab the handlebar with both hands.
5. Take care of a comfortable seat on the front seat.
6. Connect the lanyard.
7. Activate the engine start button.

7 Maintenance and Servicing

7.1 Storage

It is necessary to store the craft

- If the PWC is not used for more than 30 days
- At the end of the season when you shut down the PWC for the winter

7.1.1 Service needed for winter storage

CAUTION

Material Damage The battery and the oil may become unusable if the PWC is stored at low temperatures.

- ▸ Do not store your PWC at temperatures below 0° C.

Oil change

- ▸ Change the engine oil and oil filter. (➠ Page 79)

Info

The engine can begin to corrode internally due contaminations of water fuel and oil, left in the engine for a long time.

Conservation of the cylinders

- ▸ Unscrew the spark plugs of each cylinder.
- ▸ Fill the spark plug drillings with starter fluid or light oil.

Required Material	
Starter fluid Starter fluid	≤3 cm³ (≤0.18 in³)

- Briefly rev up the engine.
- Screw in the spark plugs again.

Battery

- Dismantle the battery.
- Store the battery in a dry, nonfreezing space.

Info
In order to avoid damage to the battery, charge it approx. once a month.

Water cooling circuit

- Rinse the water cooling circuit.

Fuel tank

- Fill the tank up with gasoline.

Info
A full tank prevents the formation of humidity.

- Mix the fuel with fuel stabilizer.

Info

Fuel begins to decompose itself after approx. 30 days. Stabilizer protects against decomposition. Consider the indicated mixing proportion.

Engine

- Flush the engine with an Antifreeze mixture via the flush kit.

Required Material
Antifreeze mixture

Info

Please use only antifreeze, compatible with Aluminium materials.

Info

The engine cooling system may be damaged when water stays inside.

7.2 Conservation of the cylinders

Lubricating Procedure

1. Remove the spark plugs.
2. Fill clean engine oil through the spark plug holes into the combustion chamber of the engine.
3. Rev up the engine briefly.
4. Install the spark plugs.

7.3 Rinsing the water cooling circuit

Technical Data

⌖	Water pipe pressure	≤2 bar (≤29 psi)

Info

Rinse the water cooling circuit according to the maintenance plan and also after every seawater ride.

Cleaning Procedure

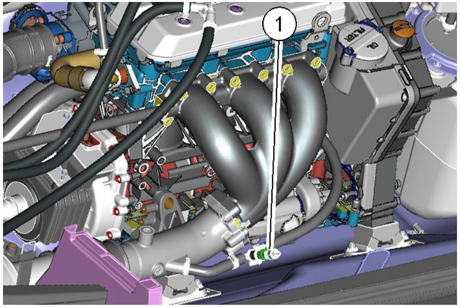
1. Clamp the water hose to the tail pipe.
2. Connect the flush kit to the water hose. (➠ Page 77)
3. Thoroughly rinse the water cooling circuit by starting the engine (within 5 sec.) until the water runs clear of dirt like salt, sand, sea shells and other pollution.

Technical Data	
Water pipe pressure	≤2 bar (≤29 psi)

4. Stop rinsing and switch off the engine.

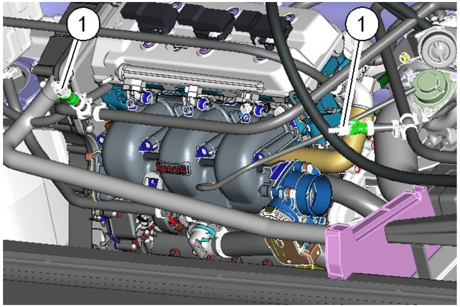
7.3.1 Flush kit

The Flush kit enables you to rinse the water cooling circuit after a ride in salt water and for maintaining your PWC regularly.



1 Flush kit device

The NACL-engine has 1 flush-kit adapter.



1 Flush kit device

The TCCL-engine has 2 adapters.

7.3.2 Connecting the flush kit

Work Material

- Flush-Kit

Info

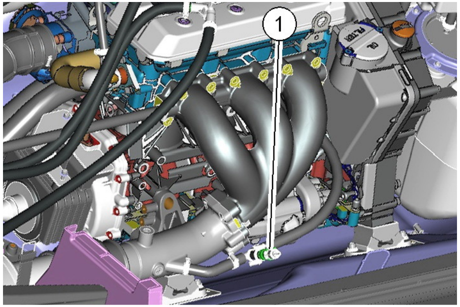
The Turbo-engine has 2 adapters.

Connecting Procedure

1. Mount the flush kit connection and connecting piece.

Required Material
Flush-Kit

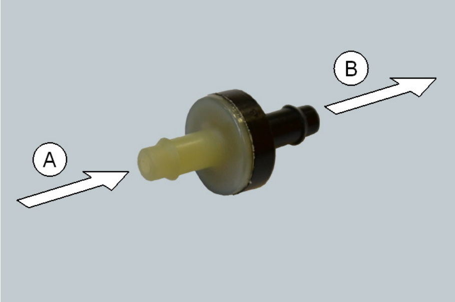
2. Attach the flush kit to the water pipeline on the engine.



1 Flush kit device

7.4 Fuel system

7.4.1 Fuel ventilation



A Fresh air

B Fuel tank

The fuel filler hose has a check valve. The check valve allows air movement. When rolling over, it will keep any leakage from the PWC to a minimum.

7.4.2 Checking the fuel ventilation valve

Checking Procedure

- ▸ Have the valve checked by an official Benelli dealer according to the inspection table.

7.4.3 Fuel stabilizer

Fuel begins to decompose itself after approximately 30 days.

▸ Add fuel stabilizer to protect it against decomposition.

Info

Consider the indicated mixing proportion.

7.5 Lubrication system

Make sure that the engine oil is always at the prescribed level so that the engine can work properly.

Change the oil filter and the oil exactly according to the inspection table.

Info

Oil will loose some of its lubrication effects over time.

Contamination as dirt, water, unburned fuel can be entrapped into the oil as well.

7.6 Changing the engine oil and oil filter

Work Material

Oil filter
O-Ring

Lubricants and Technical Substances

⌖	Engine Oil	fully synthetic 4 stroke	
		Viscosity	5W50
		Specification	API SJ-CF or higher

Filling Quantities

⌖	Oil tank Engine Oil	4.0 up to 4.5 ℓ (1.06 up to 1.19 liq. gal_{US})

Technical Data

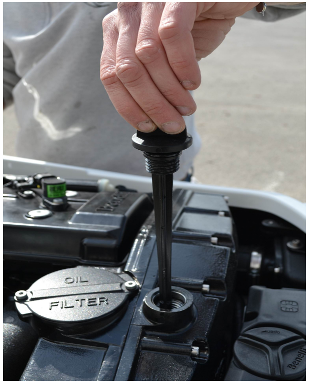
⌖	Tightening torque oil filter cover	10 N·m (7.4 ft·lb_f)
◀|▶	Tightening torque spark plugs	12 N·m (8.9 ft·lb_f)
◀|▶	Idling rpm - in water	1,500 up to 1,750 rpm (25 up to 29.17 Hz)

Info

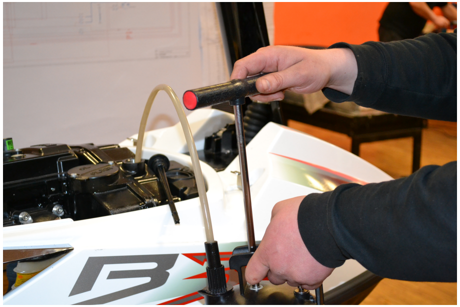
If the engine is cold when changing the engine oil, some of the old oil may remain in the oil circuit. Therefore, change the engine oil only when the engine is warm.

Changing Procedure

1. Remove the oil dip stick.

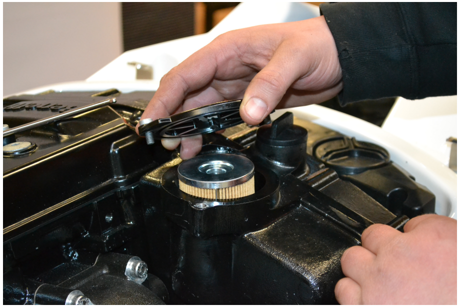


2. Pump out the oil with an extraction pump, put the suction hose as far as possible into the oil module.
3. Pump out the oil from the oil module completely. Use a suitable container to catch up the oil.

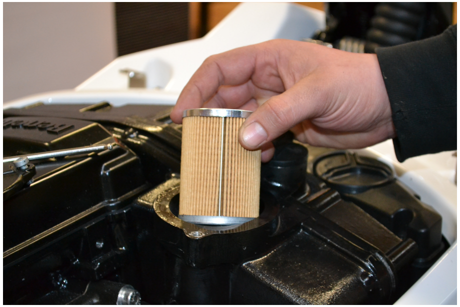


Info

There are separator walls inside the oil module. If the oil suction hose is not carefully inserted, it may not reach the bottom of the oil module and some of the old oil may remain in the tank.



4. Remove the oil filter cover.



5. Remove the oil filter.

6. Remove the spark plugs. (➠ Page 87)
7. Again insert the suction hose of the oil extraction pump into the oil module.

CAUTION

Material Damage Reving up the engine with the starter for too long may cause an insufficient lubrication of the engine and an overload of the starter.

- Do not rev up the engine for an unnecessary long period of time (max 5 sec).

8. Rev the starter for a few seconds and extract out the oil from the system.

Info

Don't rev the engine for more than 5 seconds.

9. Repeat this procedure 3-4 times, to extract the oil completely.
10. Clean the oil filter housing and cover.
11. Coat a new O-ring slightly with engine oil.
12. Install a new oil filter.
13. Install the oil filter cover and tighten the screws.

Technical Data	
Tightening torque oil filter cover	10 N·m (7.4 ft·lb$_f$)

Required Material
Oil filter
O-Ring

14. Fill the the oil tank with fresh engine oil.

Required Material	
Engine Oil fully synthetic 4 stroke Viscosity: 5W50 Specification: API SJ-CF or higher	
Oil tank Engine Oil	4.0 up to 4.5 ℓ (1.06 up to 1.19 liq. gal$_{US}$)

15. Insert the oil dip stick and tighten up.

Finishing Tasks

CAUTION

Material Damage Too much oil in the engine can cause severe engine damage.

- Never fill more than 4.5 l of oil into the engine.

1. Install the spark plugs. (➠ Page 92)

Technical Data	
Tightening torque spark plugs	12 N·m (8.9 ft·lb$_f$)

DANGER

Mortal Danger Exhaust fumes contain carbon monoxide, a colourless, odorless and highly toxic gas. Inhalation of exhaust gases can cause a carbon monoxide poisoning, asphyxia and death.

- Never run the engine in a closed room.

CAUTION

Material Damage An overheating could severely damage the engine and the exhaust system.

- **Never run the engine for more than 10 seconds outside of the water.**
- Outside of the water run the engine only in idle mode.

---

2. Start the engine, and run it in the idle position for 10 sec.

Technical Data	
Idling rpm - in water	1,500 up to 1,750 rpm (25 up to 29.17 Hz)

3. Stop the engine.
4. Check the oil level. (➠ Page 53)

7.7 Valve clearance

The clearance of the valve and the valve seats will be increased by wear and tear.

This causes a change of valve timing.

- The valve clearance for each individual valve must be checked and adjusted according to maintenance plan.

Info

Please have settings and inspections done only by an official Benelli dealer.

7.7.1 Checking/adjusting the valve clearance

CAUTION

Material Damage When the valve clearance is not adjusted correctly, the valve might remain partly open reducing the engine performance and deteriorating engine emissions. The valves and valve seats will burn and this may cause severe damage to the engine.

- Check the valve clearance and adjust it if necessary.

Adjusting Procedure

- The valve clearance for each individual valve must be checked and adjusted according to the maintenance plan.

Info

Please have settings and inspections done only by an official Benelli dealer.

7.8 Renewing the spark plugs

Work Material

⌖	Spark plug	NGK DCPR 7E

Changing Procedure

1. Remove the spark plugs. (➠ Page 87)
2. Check the candle face. (➠ Page 91)
3. Check the spark plugs. (➠ Page 90)

Required Material
Spark plug NGK DCPR 7E

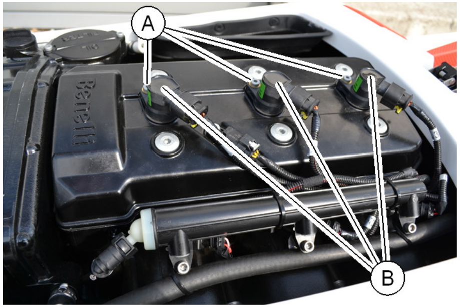
4. Install the spark plugs. (➠ Page 92)

7.8.1 Removing the spark plugs

Work Material

⌖	Spark plug spanner	16 mm
		SW 16

Removal Procedure



A Securing screw

B Ignition coil

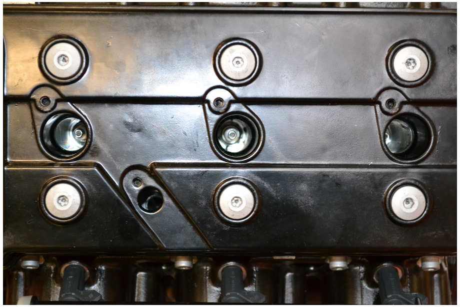
CAUTION

Material Damage Changing the spark plugs when the engine is still hot may damage the thread in the cylinder head spark plug hole.

▸ Only change the spark plugs with a cold or lukewarm engine.

---

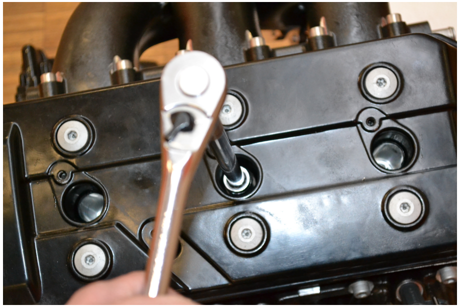
1. Disconnect the cable connectors of the 3 ignition coils.
2. Unscrew the ignition coils screws **(A)** from the cylinder head cover and remove them.
3. Remove the ignition coils **(B)**.



4. Clean the spark plug holes with compressed air.

5. Undo the spark plugs.

Required Material
Spark plug spanner 16 mm SW 16



7.8.2 Cleaning the spark plugs

Work Material

✦ Brass wire brush

Cleaning Procedure

- ► Clean the thread of the spark plugs contaminated with combustion residues.

Required Material
Brass wire brush

7.8.3 Checking the spark plugs

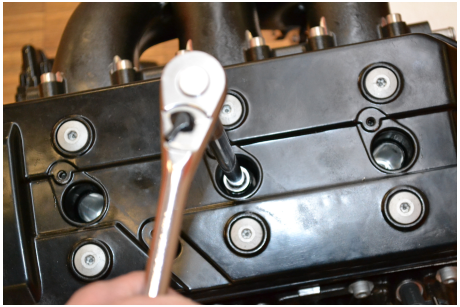
Work Material

- Feeler Gauge

Technical Data

Electrode gap spark plug	0.69 up to 0.84 mm (0.0272 up to 0.0331 in)

Checking Procedure



1. Undo the spark plug.

2. Insert the feeler gauge between the electrodes of the spark plug.

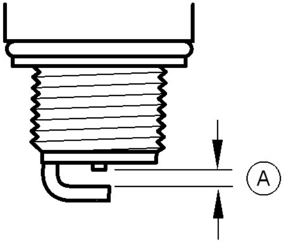
Technical Data	
Electrode gap spark plug	0.69 up to 0.84 mm (0.0272 up to 0.0331 in)

Required Material
Feeler Gauge

Result

The value differs from the standard value range.

- ► Adjust the electrode gap accordingly.



A Electrode gap: 0,69-0,84 mm

7.8.4 Checking the candle face

Checking Procedure

- ► Check the electrodes.

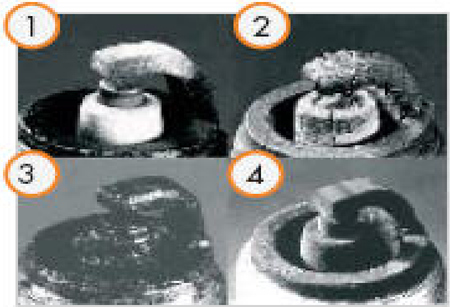
Info

Conclusions to the operation status of the engine can be made from the appearance.

Result 1 of 4

Electrodes and insulator: Central grey **(1)**

Spark plug and ignition is O.K.



Result 2 of 4

Electrodes and insulator: Light grey **(2)**

Mixture too lean.

Result 3 of 4

Electrodes and insulator: Oily **(3)**

Misfiring or badly sealing piston rings.

Result 4 of 4

Electrodes and insulator: Black **(4)**

Mixture too rich.

7.8.5 Installing the spark plugs

Technical Data

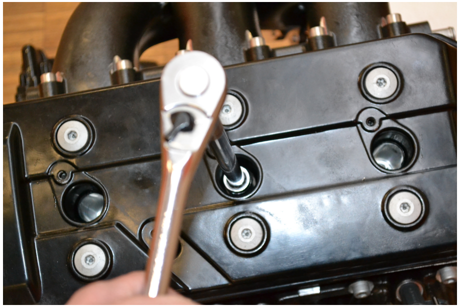
Tightening torque spark plugs	12 N·m (8.9 ft·lb$_f$)
Tightening torque ignition coils	10 N·m (7.4 ft·lb$_f$)

Assembling Procedure

1. Clean the threads of the spark plugs.

2. Screw the spark plugs into the cylinder head and then tighten them to the prescribed torque.

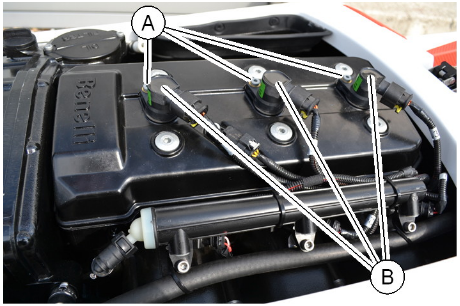
Technical Data	
Tightening torque spark plugs	12 N·m (8.9 ft·lb$_f$)



3. Install the ignition coils **(B)** and tighten the screws **(A)**.

Technical Data	
Tightening torque ignition coils	10 N·m (7.4 ft·lb$_f$)

4. Connect the cable connectors to the ignition coils.



A	Securing screw
B	Ignition coil

7.9 Steering

7.9.1 Checking the steering system

Checking Procedure

1. Check the steering.
2. If the steering is stiff or jerky or the cables are damaged, contact an official Benelli dealer.

Info

The repair of the steering is to be done by an official Benelli dealer.

7.9.2 Adjusting the steering cable

Option: B3R Dynamic, B3R Sport

Lubricants and Technical Substances

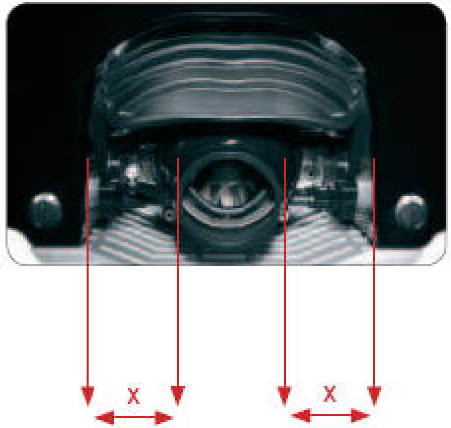
⌖ Liquid glue

Adjusting Procedure

1. Hold the handlebar in straight forward position.
2. Check the distance of the steering nozzle on the left and on the right side..
   - ◃ The distance must be the same on the left and the right side **(X)**.

   Result

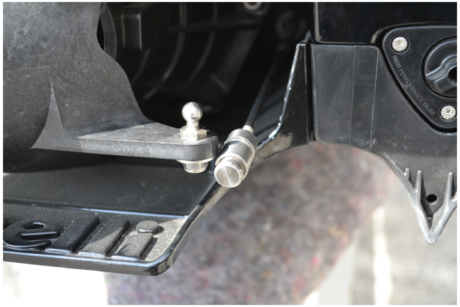
   The distance is not the same.
   - ▸ Adjust the steering cable.
3. Pull the steering cable back.



4. Disconnect the steering cable from the steering nozzle at the ball connection.
5. Pull up the connection.
   - ◃ The cable will be free from the connection.
6. Loosen the counter nut at the end of the steering cable on the right-hand side.

Info

Keep the steering always in straight forward position.



WARNING

Risk of Accident If not adequately assembled, the counter nut can loosen up by itself. This may lead to risky driving conditions.

- ▸ Apply liquid glue to the counter nut after it has been adjusted correctly.

7. Turn the cable connection to adjust the steering.
8. Apply a liquid glue to the nut before tightening it.

Required Material
Liquid glue

9. Apply it to the counter nut too after it has been adjusted correctly.
10. Reconnect the steering cable at the ball connection.

Info

Make sure the connection locks securely over the ball.

11. As an additional check, turn the steering to the left and to the right until the handlebar stops and measure the distance between the steering nozzle and the jet drive outlet.

◃ The distance should be the same on both sides.

Result

The distance is not the same on both sides.

- ▸ Adjust the steering cable accordingly.

7.9.3 Adjusting the idling rpm

Technical Data

⌖ Idling rpm - in water	1,500 up to 1,750 rpm (25 up to 29.17 Hz)

Info

The setting of the idling rpm has to be done by an official Benelli dealer.

Adjusting Procedure

- Check the idling rpm.

Technical Data	
Idling rpm - in water	1,500 up to 1,750 rpm (25 up to 29.17 Hz)

Result

The idling rpm varies from the standard value range.

- Check the throttle housing.

7.10 Servicing and guarantee

In order to keep your PWC in working condition it needs to undergo regular service procedures.

Professional servicing is absolutely necessary to maintain a permanently low level of emissions for your PWC.

This operation manual contains all the necessary information and servicing recommendations for your engine.

One condition for the guarantee given by Benelli is that you have done the change of parts and servicing of your PWC by an authorized Benelli dealer.

Please read the guidelines for a guarantee carefully.

Benelli can only grant the guarantee if these guidelines have been met.

7.11 Maintenance tasks checking

7.11.1 Checking all hose pipes

Checking Procedure

- Check all hose pipes, hose clips, nuts, bolts and fixing elements.

7.11.2 Checking the engine mounts

Checking Procedure

1. Check the engine mounts.
2. Renew if necessary.

7.11.3 Checking the engine mount bolts

Checking Procedure

- Check the engine mount bolts and tighten them if necessary.

7.12 Maintenance tasks lubricating

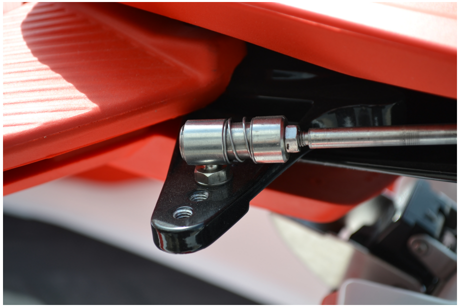
7.12.1 Lubricating the steering pivot

Lubricating Procedure

- Lubricate the steering pivot.

Info

The control shaft must be dismantled for lubrication.
Have this service done only by an official Benelli dealer.



7.12.2 Lubricating the steering cable

Lubricating Procedure

- Lubricate the steering cable connection on the steering shaft, the ball joints and the steering.

7.12.3 Lubricating the jet pump

Lubricants and Technical Substances

●	Deep-penetrating rust protection	WD 40
●	Water-resistant grease	

Info

Regular lubrication and anti-rust treatment are indispensable for the life and reliability of your PWC.

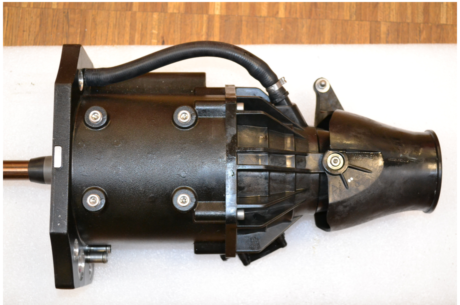
The lubrications are to be carried out according to the “inspection table” and the section "Daily checks before a ride".

Info

The control shaft must be dismantled for lubricating.

Have this servicing only done by an official Benelli dealer.

Lubricating Procedure

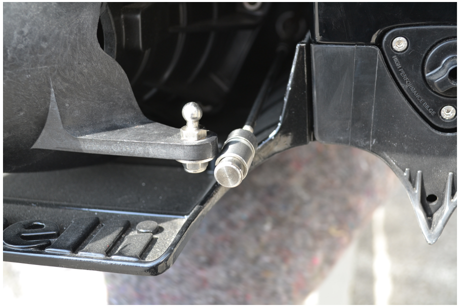


1. Lubricate the steering nozzle and water jet reverse pivots.

Required Material
Deep-penetrating rust protection WD 40
Water-resistant grease

2. Lubricate the switch ball and socket joint.

Required Material
Water-resistant grease



3. Lubricate the control joint.

Required Material
Water-resistant grease

7.13 Maintenance tasks cleaning

7.13.1 Cleaning the vehicle

Cleaning Procedure

CAUTION

Material Damage or Malfunction Cleaning the vehicle with a high pressure cleaning equipment can cause material damage and a malfunction of the system.

- Never use a high pressure cleaning equipment to clean the vehicle.

- ▸ Clean the vehicle with clear water.

8 Engine description

8.1 Safety notes

Damage to the engine as a result of not approved lubrication or fuel will not be accepted as warranty claim. Furthermore the engine will not be repaired by means of fair trading.

Same applies to damage caused by inappropriate handling and outside effects on the engine.

If work on the engine is executed - no matter which type - screws and/or nuts have to be fastened with the prescribed tightening torque.

Likewise, if a certain sequence is prescribed for tightening screws and nuts, then this has to be obeyed. The same applies to screw locking procedures.

Always use new seals if sections of the engine have to be installed or removed.

While handling fuels of all kinds, the highest caution is required. Work on the engine is forbidden while holding lighted cigarettes or other burning objects. This can lead to an inflammation of the fuel.

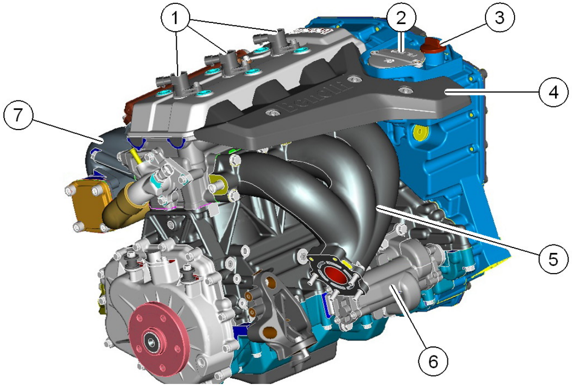
Parts of the fuel system have to be exchanged immediately when there is a visible damage.

8.2 Engine

Option: B3R Pure, NACL 150 HP

OR B3R Cruise, NACL 180 HP

Engine complete



1	Ignition coils	5	Exhaust manifold
2	Oil filter housing	6	Oil pump
3	Oil dipstick	7	Air intake manifold
4	Engine cover		

NA CL (Normal Aspirated Close Loop Cooling System): This is a normal aspirated engine with a typical cooling system (close).

It has a water pump and other connector parts. The balance shaft has two gears.

Further, this engine has not the PCJ (piston cooling jet).

Another difference with the NA OL is the engine cover.

On the B3R model we have the engine cover.

Info

This engine is assembled on the B3R Pure (with 150hp) and B3R Cruise (with 180hp).

The fuel injected engine reduces the amount of exhaust emitted by the engine into the environment.

The exhaust system was carefully constructed.

The result: An engine with a high degree of efficiency and low exhaust emissions.

8.2.1 Engine data Pure

Option: NACL 150 HP, B3R Pure

- Engine Type: Marine 3 cylinder - 4 stroke
- Engine family: I3C16 ™
- Displacement: 1602 cc
- Bore x stroke: 100 x 68 mm
- Performance: 150 HP
- Intake System:
  Multi point fuel injection

Naturally aspirated
Electronic throttle body with 60 mm diameter

- Exhaust system: Water cooled, single stage downpipe with water injection
- Valve train:
  Direct acting, double overhead camshaft
  4 valves per cylinder
- Compression ratio: 11,5 : 1
- Lubrication system: Full dry sump oil pump
- Cooling system: Open loop cooling system
- Fuel type:
  91 octane minimum via active knock control
  95 octane recommended

8.2.2 Engine data Cruise

Option: NACL 180 HP, B3R Cruise

- Engine Type: Marine 3 cylinder - 4 stroke
- Engine family: I3C16 ™
- Displacement: 1602 cc
- Bore x stroke: 100 x 68 mm
- Performance: 180 HP
- Intake System:
  Multi point fuel injection
  Naturally aspirated

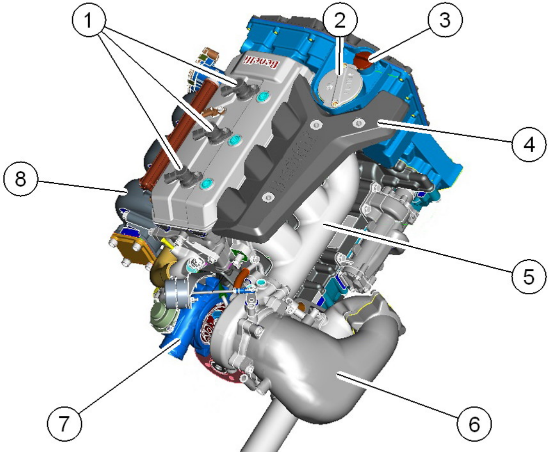
Electronic throttle body with 60 mm diameter

- Exhaust system: Water cooled, single stage downpipe with water injection
- Valve train:
  Direct acting, double overhead camshaft
  4 valves per cylinder
- Compression ratio: 11,5 : 1
- Lubrication system: Full dry sump oil pump
- Cooling system: Open loop cooling system
- Fuel type:
  91 octane minimum via active knock control
  95 octane recommended

8.3 Engine (turbo charged)

Option: B3R Dynamic, TCCL 265 HP

OR B3R Sport, TCCL 315 HP



1	Ignition coils	5	Exhaust outlet
2	Oil filter cover	6	Down pipe
3	Oil dip stick	7	Turbo charger
4	Engine cover	8	Air intake

TCCL (Turbo-charged Close Loop System): This is the turbo-charged version.

The engine has a close loop cooling system and also a PCJ in order to cool the piston.

Obviously all the exhaust manifold is different.

Info

This engine is fitted into the B3R Dynamic (with 265hp) and the B3R Sport (with 315hp).

8.3.1 Engine data Dynamic

Option: TCCL 265 HP, B3R Dynamic

- Engine Type: Marine 3 cylinder - 4 stroke
- Engine family: I3C16 ™
- Displacement: 1602 cc
- Bore x stroke: 100 x 68 mm
- Performance: 265 HP
- Intake System:
  Multi point fuel injection
  Naturally aspirated
  Electronic throttle body with 60 mm diameter
- Exhaust system: Water cooled, single stage downpipe with water injection
- Valve train:
  Direct acting, double overhead camshaft
  4 valves per cylinder
- Compression ratio: 9,1 : 1

- Lubrication system: Full dry sump oil pump
- Cooling system: Open loop cooling system
- Fuel type:
  91 octane minimum via active knock control
  95 octane recommended

8.3.2 Engine data Sport

Option: TCCL 315 HP, B3R Sport

- Engine Type: Marine 3 cylinder - 4 stroke
- Engine family: I3C16 ™
- Displacement: 1602 cc
- Bore x stroke: 100 x 68 mm
- Performance: 315 HP
- Intake System:
  Multi point fuel injection
  Naturally aspirated
  Electronic throttle body with 60 mm diameter
- Exhaust system: Water cooled, single stage downpipe with water injection
- Valve train:
  Direct acting, double overhead camshaft
  4 valves per cylinder
- Compression ratio: 9,1 : 1
- Lubrication system: Full dry sump oil pump

- Cooling system: Open loop cooling system
- Fuel type:
  91 octane minimum via active knock control
  95 octane recommended

8.4 Engine Data general

8.4.1 Filling Quantity

Fuel Tank	Gasoline ≤70 ℓ (≤18.5 liq. gal_{US})	Gasoline
Oil tank	Engine Oil 4.0 up to 4.5 ℓ (1.06 up to 1.19 liq. gal_{US})	Engine Oil

8.4.2 Engine management system

Benelli **‘SMPI-K ’**: Sequential Multi-Point Injection with Knock Control.

8.4.3 Function range engine management

- Engine characteristic-based sequential fuel injection and ignition
- Adjustment to dynamic operating conditions
- Cold start adjustment
- Overspeed revolution limiter

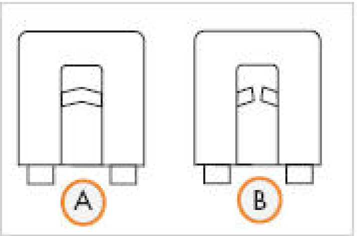
9 Faults and repair measures

9.1 Fuses

WARNING

Fire Inaccurate fuses can cause fire.

- Do not replace fuses by substitutes. Replace fuses only with a new fuse with the correct capacity.



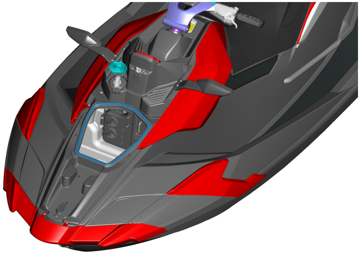
A Normal

B Defect

- If a fuse burns through during operation, check the electrical system to find the cause.
- Replace the defect fuse with a new one of the corresponding ampere.

9.2 Fuse box

The fuse box is part of the wiring harness and is fixed in the storage room.



There are 6 fuses with different amperage plugged into the fuse box.

The fuses are protected with a rubber bushing.

Info

For changing a fuse, the rubber bushing can be removed easily.

9.3 Trouble shooting

9.3.1 Engine does not start

N°	Possible Cause	Finding	Remedy
1	Engine has no power	Engine does not turn	Continue at: 2
		Engine turns	Continue at: 8
2	Safety lanyard clip not inserted at engine stop button	Confirmed	▸ Insert the safety lanyard.
		Not confirmed	Continue at: 3
3	Battery flat	Confirmed	▸ Charge the battery. (➠ Page 64)
		Not confirmed	Continue at: 4
4	Battery not connected	Confirmed	▸ Connect the battery.
		Not confirmed	Continue at: 5
5	Water in the engine	Confirmed	▸ Drain the engine.
		Not confirmed	Continue at: 6
6	Ignition cables with the coils are pulled off	Confirmed	▸ Install the ignition cables and check connections.
		Not confirmed	Continue at: 7
7	Cable coatings defect	Confirmed	▸ Check the cable coatings for defects.
		Not confirmed	
8	Low fuel level	Confirmed	▸ Fill the fuel tank. (➠ Page 57)
		Not confirmed	Continue at: 9
9	Pressure in the fuel tank	Confirmed	▸ Release the pressure in the fuel tank.

N°	Possible Cause	Finding	Remedy
9	Pressure in the fuel tank	Not confirmed	Continue at: 10
10	Fuel tank ventilation blocked	Confirmed	▸ Check the fuel tank ventilation.
		Not confirmed	Continue at: 11
11	Exhaust gas escaping in the engine compartment	Confirmed	▸ Ventilate the engine compartment and check for loose sealings.
		Not confirmed	Continue at: 12
12	Air temperature sensor defect	Confirmed	▸ Renew the sensor.
		Not confirmed	

9.3.2 Engine starts but stops again immediately

N°	Possible Cause	Finding	Remedy
1	Low fuel level	Confirmed	▸ Fill the fuel tank. (➠ Page 57)
		Not confirmed	Continue at: 2
2	Pressure in the fuel tank	Confirmed	▸ Release the pressure in the fuel tank.
		Not confirmed	Continue at: 3
3	Fuel tank ventilation blocked	Confirmed	▸ Check the fuel tank ventilation.
		Not confirmed	Continue at: 4
4	Exhaust gas escaping in the engine compartment	Confirmed	▸ Ventilate the engine compartment and check for loose sealings.
		Not confirmed	Continue at: 5

N°	Possible Cause	Finding	Remedy
5	Air temperature sensor defect	Confirmed	▸ Renew the sensor.
		Not confirmed	

9.3.3 Engine not running smoothly

N°	Possible Cause	Finding	Remedy
1	Engine misfiring	Confirmed	Continue at: 2
		Not confirmed	
2	Ignition spark weak	Confirmed	Continue at: 3
		Not confirmed	Continue at: 5
3	Spark plugs dirty or worn out	Confirmed	▸ Clean the spark plugs. (➠ Page 89) ▸ Renew the spark plugs. (➠ Page 86)
		Not confirmed	Continue at: 4
4	Spark plug connection loose	Confirmed	▸ Connect the spark plugs.
		Not confirmed	
5	Fuel mixture not ok	Confirmed	Continue at: 6
		Not confirmed	
6	Malfunction of fuel injection unit	Confirmed	▸ Check the fuel injection unit.
		Not confirmed	Continue at: 7
7	E.C.U. malfunction	Confirmed	▸ Consult a Benelli dealer for checking the E.C.U.

N°	Possible Cause	Finding	Remedy
7	E.C.U. malfunction	Not confirmed	Continue at: 8
8	Mixture too lean	Confirmed	Continue at: 9
		Not confirmed	Continue at: 12
9	Low fuel level	Confirmed	▸ Fill the fuel tank. (➠ Page 57)
		Not confirmed	Continue at: 10
10	Fuel sieves and / or filters blocked	Confirmed	▸ Clean the fuel pump sieve / filter.
		Not confirmed	Continue at: 11
11	Fuel tank filler blocked	Confirmed	▸ Check the fuel tank filler.
		Not confirmed	
12	Mixture too rich (high consumption)	Confirmed	Continue at: 13
		Not confirmed	
13	Flame arrester dirty	Confirmed	▸ Clean the flame arrester.
		Not confirmed	Continue at: 14
14	Pressure in the fuel tank	Confirmed	▸ Release the pressure in the fuel tank.
		Not confirmed	

9.3.4 Engine performance weak

N°	Possible Cause	Finding	Remedy
1	Engine misfiring	Confirmed	Continue at: 2
		Not confirmed	Continue at: 15
2	Ignition spark weak	Confirmed	Continue at: 3
		Not confirmed	Continue at: 5
3	Spark plugs dirty or worn out	Confirmed	► Clean the spark plugs. (➠ Page 89) ► Renew the spark plugs. (➠ Page 86)
		Not confirmed	Continue at: 4
4	Spark plug connection loose	Confirmed	► Connect the spark plugs.
		Not confirmed	
5	Fuel mixture not ok	Confirmed	Continue at: 6
		Not confirmed	
6	Malfunction of fuel injection unit	Confirmed	► Check the fuel injection unit.
		Not confirmed	Continue at: 7
7	E.C.U. malfunction	Confirmed	► Consult a Benelli dealer for checking the E.C.U.
		Not confirmed	Continue at: 8
8	Mixture too lean	Confirmed	Continue at: 9
		Not confirmed	Continue at: 12
9	Low fuel level	Confirmed	► Fill the fuel tank. (➠ Page 57)

N°	Possible Cause	Finding	Remedy
9	Low fuel level	Not confirmed	Continue at: 10
10	Fuel sieves and / or filters blocked	Confirmed	► Clean the fuel pump sieve / filter.
		Not confirmed	Continue at: 11
11	Fuel tank filler blocked	Confirmed	► Check the fuel tank filler.
		Not confirmed	
12	Mixture too rich (high consumption)	Confirmed	Continue at: 13
		Not confirmed	
13	Flame arrester dirty	Confirmed	► Clean the flame arrester.
		Not confirmed	Continue at: 14
14	Pressure in the fuel tank	Confirmed	► Release the pressure in the fuel tank.
		Not confirmed	
15	Exhaust blocked.	Confirmed	► Clean the exhaust system.
		Not confirmed	Continue at: 16
16	Water in fuel or oil	Confirmed	► Drain the fuel tank, refresh oil.
		Not confirmed	Continue at: 17
17	Exhaust gas escaping in the engine compartment	Confirmed	► Ventilate the engine compartment and check for loose sealings.
		Not confirmed	Continue at: 18
18	Engine overheating	Confirmed	Continue at: 19
		Not confirmed	

N°	Possible Cause	Finding	Remedy
19	Weeds or flotsam in the jet pump	Confirmed	► Remove weeds and flotsam.
		Not confirmed	Continue at: 20
20	Cooling system blocked	Confirmed	► Clean cooling system.
		Not confirmed	

9.3.5 Engine knocking

N°	Possible Cause	Finding	Remedy
1	Poor fuel quality	Confirmed	► Refill only recommended fuel.
		Not confirmed	

9.3.6 Engine smokes

N°	Possible Cause	Finding	Remedy
1	Oil level too high	Confirmed	► Contact an authorized Benelli dealer.
		Not confirmed	Continue at: 2
2	Internal damage to the engine	Confirmed	► Contact an authorized Benelli dealer.
		Not confirmed	Continue at: 3
3	Water penetrated because of a damaged cylinder head gasket	Confirmed	► Contact an authorized Benelli dealer.
		Not confirmed	

9.3.7 Engine cannot achieve maximum speed

N°	**Possible Cause**	**Finding**	**Remedy**
1	Jet pump clogged	Confirmed	► Clean the Jet pump.
		Not confirmed	Continue at: 2
2	Impeller damaged	Confirmed	► Contact an authorized Benelli dealer for replacement.
		Not confirmed	

9.3.8 Cavitation

N°	**Possible Cause**	**Finding**	**Remedy**
1	Debris caught in the impeller.	Confirmed	► Clean and check for damage.
		Not confirmed	Continue at: 2
2	Impeller damaged	Confirmed	► Contact an authorized Benelli dealer for replacement.
		Not confirmed	Continue at: 3
3	Water penetrating through leaking oil seals leads to a corrosion of the ball bearings and causes the bearings to seize	Confirmed	► Contact an authorized Benelli dealer.
		Not confirmed	

9.3.9 Steering too hard or jerky

N°	Possible Cause	Finding	Remedy
1	Steering nozzle pivot not sufficiently lubricated	Confirmed	▸ Lubricate the steering nozzle pivot.
		Not confirmed	

9.4 Environmental protection

Dispose of your waste correctly (environmental pollution is against the law).

Do not pollute beaches, coastal areas, and waters with petrol and oil.

Take care of natural habitats and their flora and fauna.

Make sure to properly dispose of your PWC's empty batteries, accumulators, engine oil, and other parts.

Consult your authorized Benelli dealer or the competent local environmental protection authorities for proper waste disposal methods.

10 Technical data

10.1 Dimensions

Technical Data	
Length	≤3.50 m (≤11 ft – 5.8 in)
Width	≤1.20 m (≤3 ft – 11.2 in)
Height	≤1.15 m (≤3 ft – 9.3 in)
Weight (dry)	≤380 kg (≤837.8 lb)

Rider capacity	
Option: B3R Cruise, B3R Dynamic	1 up to 3
Option: B3R Pure, B3R Sport	1 up to 2

Storage capacity	
Option: B3R Pure, B3R Sport	≈ 85 ℓ (22.5 liq. gal$_{US}$)
Option: B3R Cruise, B3R Dynamic	≈ 100 ℓ (26.4 liq. gal$_{US}$)

10.2 Filling Quantity

Fuel Tank	Gasoline ≤70 ℓ (≤18.5 liq. gal$_{US}$)	Gasoline
Oil tank	Engine Oil 4.0 up to 4.5 ℓ (1.06 up to 1.19 liq. gal$_{US}$)	Engine Oil

10.3 Operating temperature

Technical Data	
Operating temperature	0 up to 48 ℃ (32 up to 118.4 ℉)

Appendix

A Maintenance Plan

A.1 Maintenance

Interval	Maintenance Tasks	Page
before every ride	Lubrication System	
	Checking the oil level	53
	Engine Oil	
after the first 10 h	Boat complete	
	Checking all hose pipes	98
	Cooling system	
	Rinsing the water cooling circuit	75
	Cylinder Head	
	Checking/adjusting the valve clearance	86
	Checking the spark plugs	90
	Lubrication System	
	Changing the engine oil and oil filter	79
	Engine Oil	

Interval	Maintenance Tasks	Page
every 25 h	Boat complete	
	Checking all hose pipes	98
	Electrical System cpl asm	
	Checking the battery clamps	65
	Fuel Unit	
	Checking the fuel ventilation valve	78
	Jet Pump	
	Lubricating the jet pump	99
	Water-resistant grease	
	Deep-penetrating rust protection	
	Lubrication System	
	Changing the engine oil and oil filter	79
	Engine Oil	
	Steering	
	Lubricating the steering pivot	99
	Lubricating the steering cable	99

Interval	Maintenance Tasks	Page
every 50 h	Cylinder Head	
	Renewing the spark plugs	86
	Engine	
	Checking the engine mount bolts	98
every 100 h	Bumpers	
	Checking the engine mounts	98
	Cylinder Head	
	Checking/adjusting the valve clearance	86
	Steering	
	Checking the steering system	94
at least once a year	Cooling system	
	Rinsing the water cooling circuit	75
	Cylinder Head	
	Renewing the spark plugs	86
	Engine	
	Checking the engine mount bolts	98
	Lubrication System	
	Changing the engine oil and oil filter	79
	Engine Oil	

Interval	Maintenance Tasks	Page
After every ride in salt water	Boat complete	
	Cleaning the vehicle	101
	Cooling system	
	Rinsing the water cooling circuit	75

B Service Data

B.1 PWC Details

Owner's name______________________________

Address______________________________

____

Phone number______________________________

E-mail______________________________

Name of the Benelli dealer______________________________

Hull number______________________________

Engine number______________________________

Beginning date of guarantee______________________________

B.2 Engine Check

Date	Running time of engine	Name/Address of specialist dealer

B.3 Engine Check

Date	Running time of engine	Name/Address of specialist dealer

B.4 Engine Check

Date	Running time of engine	Name/Address of specialist dealer

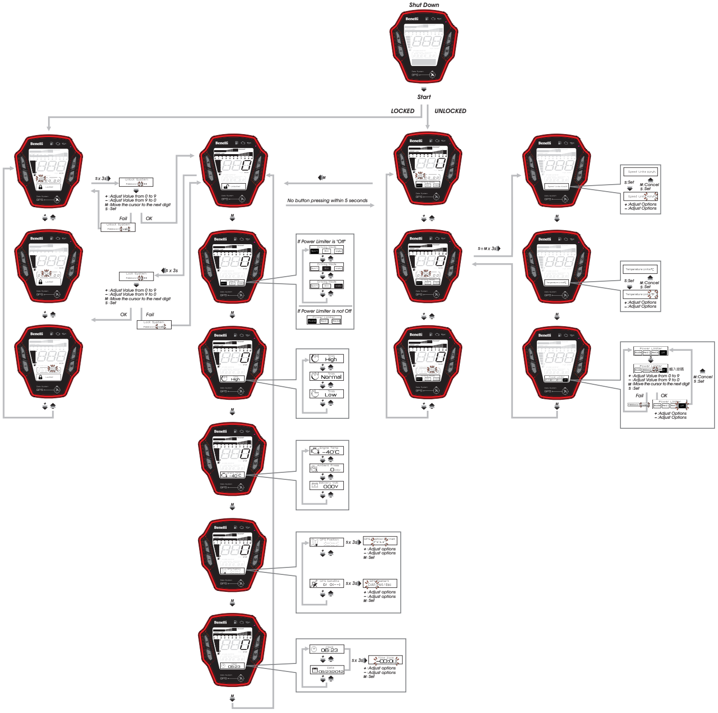
B.5 Engine Check

Date	Running time of engine	Name/Address of specialist dealer

B.6 Notes

B.7 Notes

C Dashboard Simple Instruction


Shut Down
Start
LOCKED
UNLOCKED
S x 3s
Unlock System
Password
+ :Adjust Value from 0 to 9
– :Adjust Value from 9 to 0
M :Move the cursor to the next digit
S :Set
Fail
OK
Locked
Unlocked
S x 3s
Lock System
OK
Fail
M
No button pressing within 5 seconds
If Power Limiter is "Off"
Driving Mode
Sport
Eco
Wake
If Power Limiter is not Off
Power Limiter
Trim
High
Normal
Low
Engine Temp
–40°C
Ambient Press
0 mbr
Battery Volt
000V
GPS Position
GPS Position Format
GPS Satellite
GPS Restart
Cold / Hot / Esc
+ :Adjust options
– :Adjust options
M :Set
Clock
06:23
Date
08/23/2012
Time Zone
–00:00
S+M x 3s
Speed Units Km/h
S:Set
M:Cancel
S :Set
+ :Adjust Options
– :Adjust Options
Temperature Units °C
Temperature Units °F
Off
輸入密碼
Benelli
GPS

01 Dashboard

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